

AIR TRANSPORTATION

THE WORLD'S FIRST AND ONLY AIR CARGO MAGAZINE

AUGUST
1950

*In this
Issue*

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Reaction to Editorial

About 10 days before the invasion of South Korea, Managing Editor Richard Malkin wrote an editorial, *It's Later Than You Think* (July AT), which, it appears, has met with an interesting response. Following are pertinent excerpts of letters received up to deadline:

"Your editorial, *It's Later Than You Think*, was indeed most timely and pertinent, relative to conditions both at the time of its publication and particularly in the light of subsequent developments in Korea.

"There seems to be no difference of opinion among thinking people, either within our industry, in the military services, or in the general public, relative to the vital importance of air cargo transport as an essential arm to military strength and defense. However, substantial differences begin to appear when consideration is given as to what, when, and how something is to be done about it, with the result that comparatively little seems to have been accomplished or to have been planned.

"In the interests of our national military strength and security, it is hoped that efforts such as your commendable editorial will shortly resolve these differences and contribute to the point that air cargo transport will receive their due and proper place in our military planning and procurement."

C. C. Pearson
President
Glenn L. Martin Company
Baltimore, Maryland

"Not only did I find the editorial most interesting but little short of amazing in view of the developments which have taken place since it was written. I am sure Mr. Malkin must possess many qualities of a sage.

Cornelius T. Morris
Director of Public Relations
Chase Aircraft Company, Inc.
West Trenton, New Jersey

"*It's Later Than You Think* is one of the bluestinted editorials I have read in a long time. I hope it does some good. If **AIR TRANSPORTATION** is alive to the serious situation, why isn't Washington? Maybe they are reading the wrong magazine."

John Havart
New York, New York

"AIR TRANSPORTATION is to be congratulated on the progressive thinking evidenced by such an editorial."

Albert E. Bayser, Jr.
Assistant to Director of Public Relations
Glenn L. Martin Company
Baltimore, Maryland

"In my opinion nothing will be done about this air cargo business until someone is willing to step out and manufacture an airplane for that purpose exclusively, with no commitment whatever to the military, the airlines, or the CAA. These agencies then will be forced to accept the inevitable. Until then they will oppose this development in pursuit of their own selfish interests."

"I would like to add my statement before the Senate Committee on Interstate and Foreign Commerce, 11 May 1950.

"Statement before the Senate Committee: "It is essential in the national interest that every possible delay in the development of adequate military airift be eliminated now in order that we may not be handicapped by inability to take advantage of the fleeting military opportunity which may arise in time of war, such as was the case in the last Pearl Harbor incident when the desperate need for any airift at all could be satisfied only through commandeering airline equipment, an utterly impracticable procedure in modern warfare. The crux of the problem lies in the necessity for creating a paying industry out of the potential air freight market and not vice versa. This cannot be done, however, until the fact is recognized that air freight requires separate regulation and control on a coequal basis with the passenger business. So long as this basic requirement is ignored in favor of current procedures, national defense will suffer, with Pearl Harbor No. 2 just below the horizon."

Major General Hugh J. Knerr, Ret.
Annapolis, Maryland
(Concluded on Page 26)

AIR TRANSPORTATION

The world's first and only
air cargo magazine

Established October, 1942

AIR TRANSPORTATION, published once each month, thoroughly covers the entire air cargo industry for the benefit of all those engaged in shipping and handling domestic and international air freight, air express, and air parcel post, as well as using the domestic and international air mail services. Included in AIR TRANSPORTATION's wide coverage are: air shipping, cargo plane development, rates, packaging, materials handling, documentation, air cargo terminal development, insurance, routing, interline procedures, new equipment, commercial air lines, military air transport service, air freight forwarders, personnel.

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COVER

An Air France transport, hauling cargoes from many quarters of the globe, wings its way over the African jungle. The French national airline currently serves 76 countries.

By
RICHARD MALKIN

South korea and air cargo

II
follow-up
to
last month's editorial

AS THIS EDITORIAL is being clattered out of the typewriter, the news over the radio and in garish headlines all over the country is that the Yanks are being pushed back in South Korea. The simple fact is that the Communist troops of North Korea have us outnumbered in men and materiel. Another simple fact is that if we had received heavy equipment (tanks, etc.) in time, the North Koreans never would have gained the momentum they have at this moment.

In our editorial last month (*It's Later Than You Think*), we pointed up our disagreement with President Truman's pre-Korea contention that peace was nearer than at any time since VJ Day, and stressed our own opinion that "all current signs point to another war, whether it will be tomorrow, in five years, or ten."

A little more than a week later the North Koreans crossed the 38th Parallel and started their southward push which, many fear, was the beginning of the Third World War. At least, it is conceivable that it could be.

This magazine has emphasized in numerous articles the urgent necessity for a strong, modern airfreighter fleet. We had our opportunity to have one—five years of opportunity—but we have muffed that ball.

Does one require a crystal ball and the turban of a swami to foretell the need for transporting troops and military cargo to distant spots in hours rather than weeks? Do the lessons of the Hump and Operation Vittles count for naught? Why was the Fineletter Committee's recommendation of the "creation of an Aircraft Development Corporation whose initial and primary task would be the development of an all-cargo transport plane" disregarded?

It was the aim of the President's Air Policy Commission to see the building of an airfreighter, *built for cargo purposes from the ground up*, which, though useful to the military, would be "designed primarily with a view to economic commercial operation." But nothing happened. Instead, the transports being rushed to the Orient, even though termed cargoplanes, are basically passenger planes. You can't get away from that.

REPORTING on the Berlin Airlift last year, this writer, in a Frankfurt-dated line (June, 1949, AT), stated that "the commercial air cargo future of the United States is unavoidably tied up with the entire national defense picture. A strong commercial airfreighter fleet is easily converted in time of need." That article was read into testimony before the Senate Committee on Interstate and Foreign Commerce (June 23, 1949), and is in the official record.

We are not alone in our insistence that our future as a free nation is linked with a strong air cargo transportation system. The late General H. H. Arnold said that "air power includes a nation's ability to deliver cargo, people, destructive missiles, and war-making potential through the air to a desired destination to accomplish a desired purpose."

Major General Hugh J. Knerr has said that "it is essential to our national security that prompt action be taken on developing a commercial airlift potential adequate to the emergencies of sudden attack."

Major General William Tunner was quite blunt in his statement last year that "the present fleets of MATS (Military Air Transport Service) and the airlines will not do the job."

Captain C. H. Schildhauer wrote last February that a sudden thrust by enemy forces could not be met by "surface transportation when we gear up through air power." It had to be met, he said, by "air transport and then followed up by our merchant fleet."

The price of our neglect is measured in bloody retreat in South Korea. Equanimity in Washington is the direct cause.

For the time being, the Korean war is technically not a war between two nations; it is some sort of "police action" by the United Nations, with the United States in the van as the UN's "policeman." On the surface, despite scores of thousands locked in furious battle, the fiction of a local conflict is being maintained by certain international politicians. This is mental isolationism.

We know no one personally who would like to see the Korean bubble burst into a global war, but a desire for peace does not necessarily mean its fulfillment. The long and short of it is that we must be wholly prepared for the eventuality of an all-embracing war. Anything else would be criminal and treasonable. If war never comes—and we pray it doesn't—then the billions paid for the defense of our people and friends would be the greatest bargain we ever purchased.

Meanwhile, we had better get busy turning out those cargoplanes—good cargoplanes, modern cargoplanes, fast cargoplanes, capacious cargoplanes, economical cargoplanes.

Guest Air Cargo Editorial No. 34

FRANK MACPHERSON
Special Cargo Representative
BRANIFF INTERNATIONAL AIRWAYS



EXPORTERS here in the United States now have an entirely new factor to consider in international transportation: the routing of export shipments by air all the way from factory to consignee. Before expanding this new idea, let us first look at the development of international transportation prior to this new phase.

Like any progressive step, this new advancement has needed many years of slow growth and has just reached the final stages in the last year or so. Before the advent of air cargo, export shipments were forwarded by surface transportation from shipper to consignee. Rail was used from interior points to the gateway where the cargo had to be transferred to an ocean steamer for carriage to a foreign port. Often the ultimate consignee resided in an inland city, which made necessary another transfer to surface transportation in the foreign country for final delivery. This slow means of transportation, combined with the heavy packing required to withstand the long trek and numerous handlings, had many obvious disadvantages.

With the coming of international air cargo, some of these disadvantages were surmounted. The airplane could be used from the United States gateway to the foreign port and sometimes to the final destination. But the shippers still depended on inland freight (often Railway Express) for transportation to the gateway. Also, domestic airlines in foreign countries had not grown to the point where a satisfactory service could be offered for delivery to consignee not in cities served by international carriers. This meant that from a time standpoint most of the journey was consumed by surface transportation. Therefore, although the delivery time on a shipment was less, heavy packing and many handlings remained as obstacles to the development of international air cargo. Now, however, the third step in the development has been reached. This is the use of air cargo directly from the inland factory to the consignee in a foreign inland city. Time has been cut to a minimum, packing is less costly and adapted to air shipping, and handlings are reduced or else performed by personnel trained for efficiency.

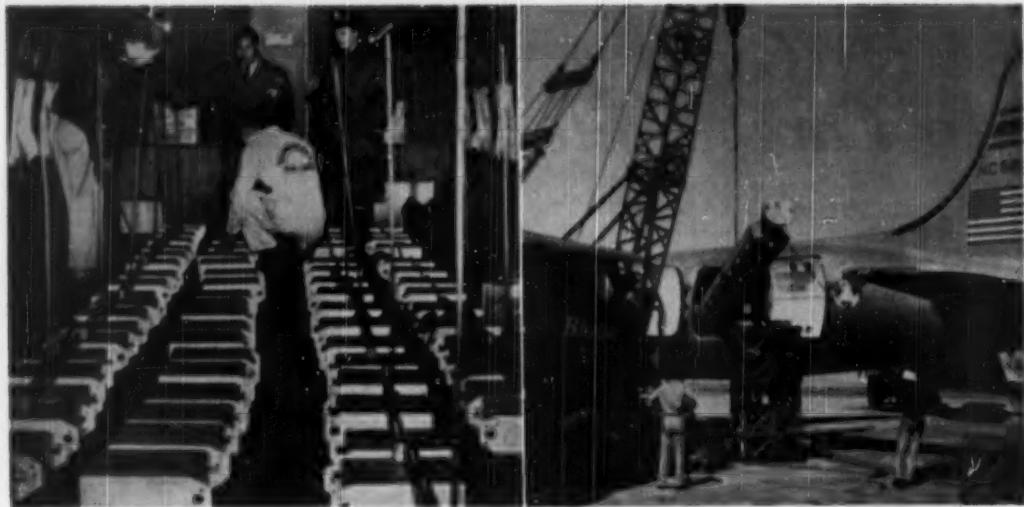
This new, widely used method of shipment has developed for two reasons: (1) the growth of domestic air freight here and abroad; and (2) entrance of United States domestic carriers into the international field. This gives the picture

of a vast United States network of airlines joined by international trunk carriers to similar networks of air freight service in many foreign countries. With the postwar growth of domestic air freight within the United States, air service has been given to the entire country, rates have decreased materially, and handling methods have improved to the point that dependable, low cost, fast transportation is available to domestic industry. Rates have now been reduced to the point where, in some instances, they can be compared to rail freight rates. Alongside this growth in the United States, many foreign countries have established air cargo service within their own boundaries. With the development of road and rail transport seriously impeded by natural geographic barriers, these countries have solved their internal problems of transportation and communications by use of aircraft. This is particularly true in Latin America. The result is the growth of a dependable air transportation system to serve the countries' needs.

To tie these new national systems, United States and foreign, together, some United States domestic carriers were allowed to enter the international field to provide adequate service for our industry. This is another postwar development. Overseas routes were granted to such airlines as American, Braniff, Chicago and Southern, Eastern, National, Northwest, TWA, and United. The extension of these routes is largely responsible for this new service to United States exporters.

Airlines which serve the interior of the United States can now provide direct one-carrier service to many inland cities abroad. This is the ultimate in service desired by exporters for many years. The airline to which the shipper entrusts the cargo in an inland city is the same carrier that delivers the merchandise to the consignee abroad. It represents only one-carrier responsibility. For instance, a shipment from Chicago to Rio de Janeiro can now be handled by Braniff alone. To supplement the one-carrier service, between cities not served by one international carrier, joint rates and agreements were entered into to provide low-cost, dependable transportation by carriers experienced in air cargo. Out of this arrangement has come service, tailor-made for exporting firms.

Not only do they not have to package for surface trans-
(Concluded on Page 16)



GOLD IS WHERE YOU FIND IT—in this case the cargo hold of a Transocean Air Lines cargo plane. This represents part of a \$50,000,000 shipment of gold hauled by air from Tokyo to the

Federal Reserve Bank in New York. Saved: time, insurance, and expenses for protection of cargo . . . Six-ton propeller shaft (right) airfreighted overnight from Oakland to Panama by Pan American.

Out California-Way, they're taking shipping-by-air seriously. One of the biggest projects of recent years is the two-pronged California Air Freight Clinic and Air Freight Fair which will be held in Oakland this month. Shippers, carriers, manufacturers, and government are combining to show that

CALIFORNIA'S ON THE BEAM

By W. H. PARK. • President, Oakland Chamber of Commerce

AIR FREIGHT, which is logging its 24th year of service to California will be searchingly studied by experts in and out of the industry for the benefit of present and potential customers at the California Air Freight Clinic and Air Freight Fair to be held in Oakland, August 19 and 20.

While the spotlight will play on the service of the present and the immediate future and ways and means of penetrating the vast potential of sky-borne tonnage within the state, the pioneering era will have a brief moment during the meeting.

Air freight has gone far in its comparatively short career, but the pace has been so fast and the obstacles so engrossing that its history, at least as far as California is concerned, has never been officially compiled. However, old timers will generally agree that it entered the transportation pic-

ture as a long-haul contender against the surface carriers in November, 1926, when a single-engine Western Air Express plane winged into Los Angeles from Salt Lake City with Utah celery sprouting from the front cockpit into which usually were sandwiched a passenger, the mail bags, and the tool kit.

The celery shipment was the first of a series of similar ventures and was followed in the early Thirties by ambitious Los Angeles to New York flights with cut flowers, and later by pioneering hops across the Pacific.

The real push in air freight, in California as well as throughout the nation, came rolling out of World War II on the impetus supplied by air power enthusiasm and the war demonstrations of airlift, and it is to consolidate the postwar gains and open the way to new achievements and greater benefits that

the California Air Freight Clinic and Air Freight Fair are being held.

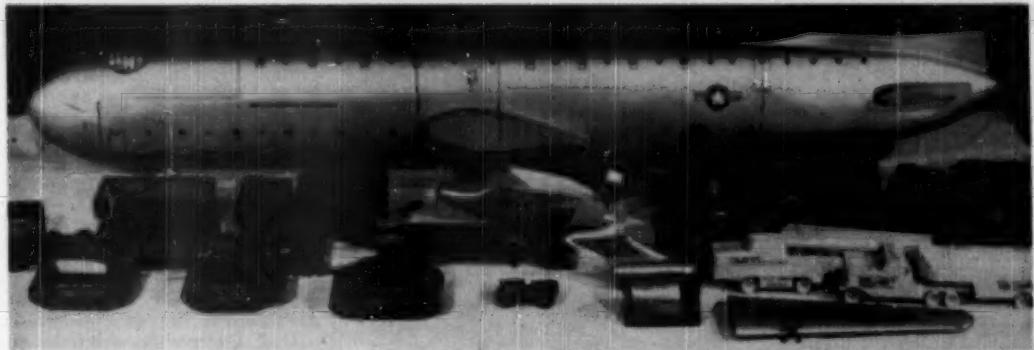
One of the first all-air freight events and the largest yet attempted, the Clinic and Fair evolved from the Oakland Chamber of Commerce Aviation Committee's long-time interest in developing air freight as a means of expanding the markets of the growing concentrations of industry and agriculture within its sphere of activity. In an early analysis of the situation, the committee found that the San Francisco-Oakland Bay region and the Los Angeles area and other fertile and productive sections of the Golden State could provide the answers to air freight dreams. They offered a rich and fast-growing market for the Eastern and Midwestern industrial centers and with the rest of California, provided the nation's largest production of fresh fruits

(Continued on Page 20)

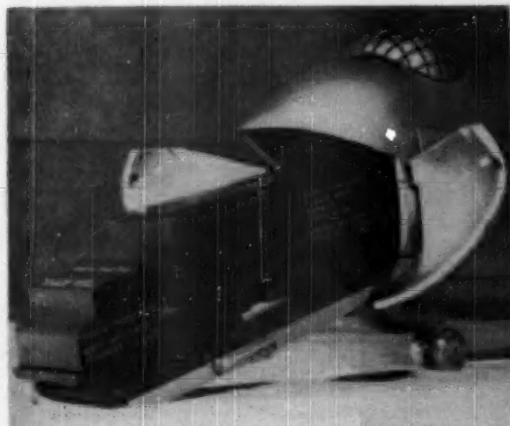


CONSOLIDATED-VULTEE'S PROPOSED TRANSPORT, cargo version of the XC-99, which earlier this year made a test flight with 100,000 pounds of freight aboard—an all-time high for airborne payload. Differing from the XC-99 in several respects, the C-99 offers easier loading through clamshell nose doors and elongated tail doors, 57 percent more usable cargo space, pressurized crew compartment and upper deck, B-36-type flight deck, and higher-horsepower engines. Cargoplanes of this size would come in handy in Korea.

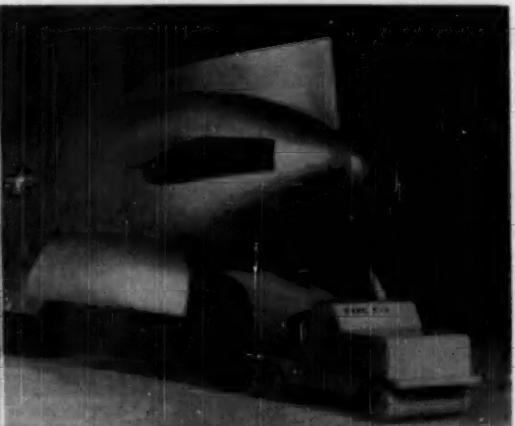
CARGO TWIN OF THE XC-99



CUTAWAY SCALE MODEL of proposed C-99. In foreground are some heavy equipment which can be hauled singly or more.



HOW TRUCK-TRACTOR could back into or drive out through clamshell nose doors. Plans of the C-99 provide for an entrance of approximately 12 x 13 feet, big enough for most anything.



HOW TRUCK-TRACTOR enters or leaves giant transport through elongated tail doors. Ramps at both the nose and the tail are at low angle, thus simplifying the loading and off-loading procedures.



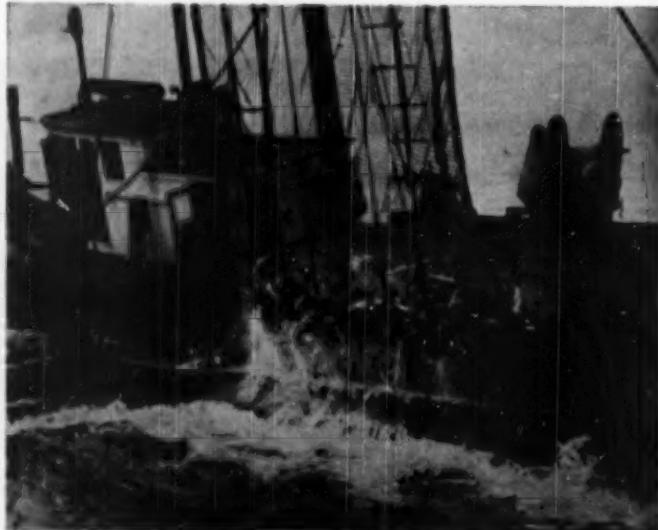
A CONSIGNMENT OF FRESH SEAFOOD airshipped out of Houston via Braniff.

AIR EXPRESS vs. RAILWAY EXPRESS

A Comparison of Freshness of Fishery Products

By WILLIAM B. LANHAM, JR.

Formerly Chemist
Branch of Commercial Fisheries
Fish and Wildlife Service
U. S. Department of Interior



HAULIED OUT OF THE SEA in nets, these fish will soon be on their way to market by air.

PAGE 10—AIR TRANSPORTATION—*Air Commerce*

SINCE FRESH FISH AND SHELLFISH are most desirable in flavor immediately after being removed from the water, the speed with which fishery products reach the consumer would seem to be of considerable importance. Increasing interest, therefore, has been shown in air transport, the newest of the methods of cargo transportation, since it offers a marked advantage in speed over the conventional methods of surface transportation. For distances of 1,000 or more miles, several days are usually required for rail or truck shipment. The airplanes can cover this distance in less than a day. It would appear logical that fresh fishery products shipped by air transport would be fresher upon arrival than those shipped by other carriers, conditions being otherwise the same.

In order to determine whether or not the savings in transportation time made

NOTE: The author was assisted by Ralph Russell, Samuel R. Pottinger, and Rose G. Kerr.

possible by using air express would be reflected in the delivery of fresher fish and shellfish. The Fish and Wildlife Service conducted a number of trial shipments during December, 1946, and February, March and April, 1947. In general, the plan followed was to ship several species of fish and shellfish by air and by rail for a distance of at least 1,000 miles, and at the end of the trip to compare the products simultaneously for differences in freshness.

Several conditions had to be met which limited the source of the fishery products and the choice of the route over which they were shipped. All shipments had to terminate at a place where adequate facilities for conducting freshness tests were available. The origin and terminus of the shipments had to have commercial airport facilities. Shipments had to originate from a port where a continuing supply of fish and shellfish could be expected. The shipments had to travel at least 1,000 miles in order that there might be sufficient time differentials. With these limitations in mind, it was decided to make the shipments from several ports in Florida and from Seattle and to have them terminate at Washington, D.C. The fish and shellfish were tested after shipment at the Fish and Wildlife Service's Laboratory in nearby College Park, Maryland.

In comparing fishery products shipped by the two types of carriers, it would have been desirable to use two samples from the same catch. Since there would be a difference of several days in the transportation time, by the two methods, the samples would have been received

and tested several days apart. Comparisons by taste could not be made on this basis with any reasonable degree of accuracy. Consequently, fish and shellfish of comparable freshness and from the same locality, were obtained and shipped the necessary number of days apart so as to arrive for testing on the same day.

Packaging

Fish and shellfish to be shipped by surface carriers are commonly packed in wooden boxes or barrels with crushed ice. Water from the melting ice and drippings from the fish drain from these containers onto the floor of the truck or express car. The weight of the ice amounts to 50 percent or more of the net weight of the fish, but at the time of these experiments, shipping charges were based on 125 percent of the weight of the fish.

Under the system in use for air shipments transportation charges were assessed on the gross weight of the container and its contents. With the conventional box or barrel and ice, the cost of transport would have been based on the combined weight of the container, fish and ice. Shipping in this type of container would be too costly, since the shipping container and ice would weigh about as much as the fish. The leakage from these containers would present a problem, also, especially if the shipments were carried in a passenger plane or in a cargo plane with a mixed cargo.

At the time these tests were made, the packaging industry had produced

(Continued on Page 23)



Can you guess the weight of this airborne salmon? That's what more than 1,000 customers of Carson, Pirie Scott's Men's Grill did for a chance to take the king-size fish home. It all tied in with a promotion start to emphasize the Chicago department store's special luncheon menus of broiled fresh salmon. Northwest Airlines, which regularly hauls consignments of seafood, flew the salmon in from Seattle in less than nine hours.

FAST..CAREFUL..DIRECT



**AIR
CARGO
SERVICE**
to
**ALL EUROPE
THE NEAR EAST
THE BELGIAN CONGO
SOUTH AFRICA**

via

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United States Overseas Air Cargo Services

By N. W. KENDALL

Transportation Division
Office of Domestic Commerce
United States Department
of Commerce

PART V

For some time prior to November, 1946, the Bureau of the Census published statistics of exports of individual commodities rather than commodity groups. Table 8, compiled by selecting from each monthly published report the individual instances of exports valued at \$100,000 or more, reveals some details concerning specific commodities exported during the first 10 months of 1946 which are not apparent from Table 6.

Tables 9 and 10 pertaining to air imports correspond to Tables 6 and 8 dealing with air exports. The former depicts the value of general imports by air during each quarter of 1946 and 1947, by commodity group, the latter the value of leading individual commodity classes flown into the United States during each of the first 10 months of 1946.

An inspection of Tables 9 and 10 reveals clearly that, from the standpoint of dollar value, a relatively few commodity groups—chiefly watches, clocks and parts; precious stones; precious metals; and furs and manufactures—were predominant in the air import trade. Table 11, corresponding to Table 7 for exports, discloses the relative importance of goods in the air import movement during 1946 and 1947.

As in the case of air exports, but to a somewhat less marked degree, the 10 leading air import commodities in 1947, on the basis of value, were also relatively important in 1946. However, in the case of imports, the concentration of dollar value is a few commodities was more pronounced. The 10 commodity groups shown in Table 11 accounted for 79.8 percent of the total value of all United States general im-

Table 7.—Relative Importance of Leading Commodities in the Air Export Trade of the United States, 1946-47

Group No.	Commodity Description	Rank in		Rank in		Combined Value in 2 Years, 1946-47 (\$000)	Percent of Value of All Com- modities, 1946-47
		1947	1946	1946 and 1947	1947		
36	Wearing apparel, synthetic fibers	1	6	2	2	335,508	11.4
62	Medicinal and pharmaceutical preparations	2	1	1	1	41,722	1.5
77	Aircraft parts and accessories	3	4	3	3	26,215	0.9
93	Fountain pens and parts and mechanical pencils	4	3	4	4	25,774	0.9
96	Jewelry, including precious metals	5	2	5	5	21,530	0.8
65	Furs and manufactures	6	5	6	6	18,544	0.6
71	Electrical machinery and apparatus	7	9	8	8	12,761	0.4
91	Photographic and optical goods	8	7	7	7	14,897	0.5
32	Synthetic fibers and manufactures, n.e.s.	9	8	9	9	10,521	0.4
95	Watches, clocks and parts	10	14	10	10	7,772	0.3
Total						214,893	69.5

ports by air during the two-year period, two of the 10 (watches, clocks and parts; and precious and semiprecious stones and imitation and industrial diamonds) alone making up 56.5 percent.

The foregoing discussion of air trade by commodity group has been in terms of dollar value. An analysis on the basis of shipping weight would reveal a somewhat different picture with respect to leading commodities. For example, such commodities as machinery parts, books and printed matter, textile fibers and manufactures, and inedible vegetable products would constitute relatively important components of total air exports on the basis of shipping weight, though not necessarily in terms of value. In the case of air imports, one of the chief commodities on a weight basis is avocados. Under agreements with Cuba, avocados have been imported only during the period from June 1 to September 30, and not during the remainder of the year. While relatively low-valued, shipments of avocados aggregated approximately 2.2 million pounds during the third quarter of 1946, or nearly 63 percent of the total shipping weight of air imports during that period.

(C) Air Trade by Country of Origin or Destination

A relatively few countries account for the greater part of the value and

shipping weight of exports from, and imports to the United States via air, as will be shown in Table 12. But it is noteworthy that this country has conducted trade by air with a large percentage of all foreign countries. An analysis of foreign trade by air during April, 1947, reveals that, of some 139 individual countries or areas listed in Census Schedule C, Code Classification of Countries, all but 22 were destination areas for United States air exports, and all but 54 were origin countries for United States air imports. The 22 countries or areas to which goods were not shipped by air were Greenland; Miquelon and St. Pierre Islands; Estonia; Latvia; Gibraltar; Albania; Arabia Peninsula States, n.e.s.; Asia, n.e.s.; Manchuria (Manchukuo); Korea (Chosen); Taiwan (Formosa); New Guinea (Australian); Anglo-Egyptian Sudan; Cameroon; British West Africa, n.e.s.; Madeira Islands; French Somaliland; British Somaliland; Seychelles and Dependencies; Mauritius and Dependencies; Northern Rhodesia; and Southern British Africa.

In addition to the above 22 areas, which carried on no air trade in either direction with the United States, the following 32 countries or areas exported no goods to the United States by air during April, 1947: British Honduras; Barbados; Falkland Islands; Lithuania; Malta, Gozo and Cyprus; Rumania; Bulgaria; Kuwait; Aden;

State of Bahrain; Afghanistan; Ceylon; French Indo-China (including French India); Portuguese Asia; Hong Kong; Western Pacific Islands, n.e.s.; French Morocco; Tangier; Tunisia; Libya; Canary Islands; Spanish Africa, n.e.s. (Spanish Morocco, Rio de Oro and Spanish Guinea); French Equatorial Africa; Gold Coast; Nigeria; Portuguese Guinea, n.e.s.; Liberia; Eastern Italian Africa; British East Africa; Mozambique; Madagascar; and Southern Rhodesia.

A further observation concerning trade by air in April, 1947, is that a number of the countries shown above with which no such trade was conducted also carried on no ocean trade with the United States during the month under consideration. In April, 1947, no United States exports by any medium of transport were received by Estonia; Latvia; Asia, n.e.s.; Manchuria (Manchukuo); and Portuguese Guinea, n.e.s. During the same month, the United States received neither air or ocean imports from Greenland; Milneburg and St. Pierre; Falkland Islands; Estonia; Latvia; Lithuania; Gibraltar; Albania; Kuwait; Asia, n.e.s.; Manchuria (Manchukuo); Korea (Chosen); Taiwan (Formosa); New Guinea (Australian); Canary Islands; Spanish Africa, n.e.s. (Spanish Morocco, Rio de Oro and Spanish Guinea); French Somaliland; Mauritius and Dependencies; and Southern British Africa.

United States air exports during April, 1947, ranged from shipment of two pounds (to Bulgaria) to 631,055 pounds (to Mexico); in terms of value from \$1 (Eastern Italian Africa) to \$2,585,243 (Mexico). The weight of imports by air varied from one pound (received from Azores) to 353,077 pounds (from Canada); while their value ranged from \$24 (Paraguay) to \$2,826,893 (Switzerland).

Table 12 summarizes for the year 1947, and for each quarter, the value and shipping weight of United States

(Continued on Page 16)

Table 8—Value of United States Exports by Air of Domestic and Foreign Merchandise, Leading Commodities, January-October 1946¹

Commodity	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	(In thousands of dollars)											
											1946	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946	1945
Mink, undressed	161	152	149	230	171	167	161	161	161	161	153	153	153	153	153	153	153	153	153	153	153	153
Fur, dressed or dyed, n.e.s.	167	125	249	330	171	167	161	161	161	161	153	153	153	153	153	153	153	153	153	153	153	153
Fur wearing apparel	184	110	380	335	492	383	284	290	301	400	400	400	400	400	400	400	400	400	400	400	400	400
Dresses, etc., synthetic, except knit or crocheted	138	130	305	290	198	160	110	196	196	196	231	231	231	231	231	231	231	231	231	231	231	231
Nylon hosiery, women's and children's	230	256	657	507	131	265	227	402	503	368	368	368	368	368	368	368	368	368	368	368	368	368
Antibiotics, derivatives & preparations	362	345	833	708	1,460	1,540	1,344	1,200	1,019	564	564	564	564	564	564	564	564	564	564	564	564	564
Medicinal chemicals for prescription use, n.e.s.	134	—	—	—	—	—	—	—	—	107	—	—	—	—	—	—	—	—	—	—	—	—
Eyeglasses, n.e.s. and frames	163	—	117	180	160	171	175	231	231	231	183	183	183	183	183	183	183	183	183	183	183	183
Tooth	100	—	119	207	110	142	—	167	132	102	—	—	—	—	—	—	—	—	—	—	—	—
Pens, fountain and stylographic of plastic materials	207	155	192	284	265	471	336	420	700	734	—	—	—	—	—	—	—	—	—	—	—	—
Jewelry, etc., gold or platinum	169	—	150	189	140	545	173	212	581	574	—	—	—	—	—	—	—	—	—	—	—	—
Jewelry, women's, metal except gold or platinum	105	—	119	275	279	321	280	300	309	347	—	—	—	—	—	—	—	—	—	—	—	—
Stones, precious, semiprecious, synthetic, and imitation, n.e.s.	230	128	265	144	203	191	239	—	265	301	—	—	—	—	—	—	—	—	—	—	—	—
Merchandise, value less than \$25	135	—	127	108	162	172	136	164	170	238	—	—	—	—	—	—	—	—	—	—	—	—
Other aircraft parts and accessories, n.e.s.	142	111	215	253	536	343	292	256	514	455	—	—	—	—	—	—	—	—	—	—	—	—
Fur manufactures, n.e.s.	—	—	70	229	130	219	—	137	—	107	—	—	—	—	—	—	—	—	—	—	—	—
Woven synthetic yarn fabrics, n.e.s.	—	—	133	131	—	123	—	228	—	139	—	—	—	—	—	—	—	—	—	—	—	—
Diamonds for industrial use only	—	—	277	—	158	108	108	—	145	—	—	—	—	—	—	—	—	—	—	—	—	—
Glandular products	—	—	104	—	—	—	—	—	—	101	—	—	—	—	—	—	—	—	—	—	—	—
Jewelry, men's, except gold or platinum	—	—	112	123	140	161	142	146	173	204	—	—	—	—	—	—	—	—	—	—	—	—
Parts of aircraft, radio transmitters and receiving sets	—	—	—	—	128	—	—	—	—	106	—	—	—	—	—	—	—	—	—	—	—	—
Parts and accessories for aircraft engines, n.e.s.	—	—	—	—	135	205	205	127	147	103	137	—	—	—	—	—	—	—	—	—	—	—
Motion picture features, expand, 35 mm, positive	—	—	136	120	—	—	—	—	—	118	133	—	—	—	—	—	—	—	—	—	—	—
Jewelry, women's, all materials, except metal	—	—	167	129	115	104	144	129	131	131	131	—	—	—	—	—	—	—	—	—	—	—
Fur, lamb and sheep, dressed or dyed	—	106	—	—	103	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fur, seal, dressed or dyed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vitamin and vitosterol (fish oils and fish liver oils and concentrates, medicinal grade)	—	—	—	—	—	130	—	131	—	118	—	—	—	—	—	—	—	—	—	—	—	—
Dental metals, precious, except silver alloys and amalgams	—	—	109	—	—	115	—	—	—	107	—	—	—	—	—	—	—	—	—	—	—	—
Vaccines for human use	—	—	147	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Platinum bars, ingots, sheet, etc.	—	—	—	—	178	125	108	129	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pens, fountain and stylographic except those of plastic materials	—	—	—	—	—	—	—	140	222	206	207	—	—	—	—	—	—	—	—	—	—	—
Watchers with jewels	—	—	—	—	—	140	—	150	196	—	—	—	—	—	—	—	—	—	—	—	—	—
Wool cloth and dress goods	—	—	—	—	—	—	—	—	131	—	—	—	—	—	—	—	—	—	—	—	—	—
Radial dial engines over 1830-inch piston displacement	143	125	—	—	—	—	—	—	100	—	—	—	—	—	—	—	—	—	—	—	—	—
Powder, fountain and stylographic	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Notions, cheap novelties, and specialties, n.e.s.	—	—	—	—	—	—	—	—	161	—	110	—	—	—	—	—	—	—	—	—	—	—
Radio receiving sets	—	—	—	—	—	—	—	—	—	—	210	—	—	—	—	—	—	—	—	—	—	—
Aircraft engine parts and accessories; carburetors, cowls, crankcases, cylinders, generators, magnetos, spark plug, starters, superchargers and valves for use in aircraft engines	—	—	—	—	—	—	—	—	—	—	—	114	—	122	—	—	—	—	—	—	—	—

¹ The table is restricted to individual commodities with monthly export value of at least \$100,000.



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THE sudden invasion of South Korea by the Communist forces north of the 38th Parallel has brought a repeat job of Pearl Harbor. Although requisitioning is not yet the order of the day, military authorities are calling upon the commercial airlines to haul cargoes to the Far East. Carriers already involved are: Northwest, United, Pan Am, Seaboard and Western, Flying Tiger, Transocean, Alaska, TWA, Capital, American Overseas, and Overseas National.

BOAC's planes have been busy flying errands of mercy these past weeks. Recently a Stratocruiser hauled eight tons of relief supplies from London to Winnipeg for victims of the disastrous floods (see picture in last month's AT). A few days later, 11 tons of bedding, curtains, towels, and other household equipment followed. On the other side of the world, BOAC planes flew tons of penicillin to India.

Among the more normal consignments carried by the British airline was a half-ton (17 units) of furniture, from Prestwick to New York: cocktail cabinet, chairs, and tables, to be set up in a Scottish firm's New York office.

Israel is negotiating with Belgium and Italy with an eye toward settling bilateral air transport agreements. El Al, the Israeli air carrier, which is inaugurating direct flights to New York, operates nine aircraft with a tenth soon to join the fleet. Four DC-4s fly the Israeli flag, two of which were purchased from United Air Lines. Five C-46s are flown internally. A DC-3 is awaited.

No one expects to see coal in normal commercial flight for many a decade to come—if ever—but only the other day KLM hauled a shipment of coal from New York to Zurich. Truth to tell, it was only a consignment of coal samples for the Swiss Gas Works.

A new service to Madrid was opened several weeks ago by the Dutch airline. The new service, which is routed via Frankfurt and Nice, is on a twice-weekly basis.

The North American Division reports that during the month of May a new high in the movement of air cargo was reached. The total of 235,000 pounds of revenue cargo broke KLM's best previous month of July, 1948.

Trans-Canada Air Lines tells the story of a Toronto business man who moved his entire household of furniture a distance of 1,000 miles in only 4½ hours. The six

rooms of furniture (piano, stove refrigerator, washing machine, chesterfield suite, beds, china, etc.) weighed 6,500 pounds. A single plane did the job.

Northwest Airlines is doing it the right way. J. M. Cook, director of advertising for the airline, accompanied by Mark Mitchell, copy chief of Cunningham and Walsh, advertising firm, are in the Orient for the purpose of making surveys and gathering material which would be helpful in stimulating NWA's cargo and passenger business. The information Cook and Mitchell will come home with will find their way into ads, displays, movies, etc.

Destination tape labels—"a positive means of determining the destination of a package by a quick glance"—is the brainchild of Curt Haxthausen, cargo traffic superintendent for Pan Am's Pacific routes. Each destination has an individual color design to make it stand out. Benefits of the new Scotch tape labels, which were produced with the aid of Cello-tape Printers, Palo Alto, California, are listed as follows:

- Individual color schemes for each station enable the shipments to be spotted in a jiffy for stowing in or unloading from aircraft.

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TWA arrived in New York the other day with what amounted to a good-sized menagerie aboard a cargo plane from Paris. Aboard were seven baby African gorillas,

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25 monkeys, a dozen chimpanzees, and nine vipers. The animals were consigned to Trefflich's Bird and Animal Company, New York. They'll wind up in various zoos throughout the country.

May was a record cargo month for Braniff International Airways, beating the same month last year by 113 percent. Frank Macpherson, special cargo representative (see Guest Air Cargo Editorial), stated that "during the first five months of 1950, Braniff Airways' air freight revenues increased 74 percent over those for the same period in 1949. This included an increase of 54 percent in Braniff's domestic air freight revenue."

Sabena's inauguration of helicopter mail pickup and delivery service in Belgium is scheduled for this month. The Belgian airline's two Bell meet the big airliners at Airport, Brussels, transferring air mail for delivery to London, Paris, New York, and other big cities in Europe and Africa.

Western Air Lines has applied to the Civil Aeronautics Board for permission to operate one-plane service between Los Angeles and Minneapolis-St. Paul.

Mid-Continent Airlines also reports that May was its best cargo month since cargo operations were started 3½ years ago. Revenue was 32 percent above May, 1950, and tonnage 38 percent over.

Harding L. Lawrence, vice president-traffic and sales, Pioneer Air Lines, gives the news that January-May, 1950, as compared with January-May, 1949, shows air freight ton-miles up by 105 percent, air express up 67 percent, air mail up 13 percent, and excess baggage up 19 percent.

In a six-month review of the Flying Tiger Line (November, 1949-May, 1950), issued by Robert W. Prescott, president, the air freight carrier gained 25 percent over the same period of 1949. Prescott, recently returned from Europe, stated that "integration of operations under the certificate has been a major task and we should see the full effect of our plans and expansions in the second half of the year." The line is operating 19 domestic stations.

(there were only a half-dozen last year) and the airfreighter fleet has been doubled. FTI's president predicted that the last half of 1960 will be "the most successful in our history."

Joseph J. O'Connell, who became chairman of the important Civil Aeronautics Board on April 6, 1948, has resigned his post. He stated that he wished to return to private life because of "personal considerations." O'Connell's term was to have terminated December 31, 1953.

The New York Times, in a recent editorial entitled, *Air Cargoes*, spoke of the "coming development of special cargo-type aircraft which may be expected to bring closer the day when air transport, like other forms of transportation, will draw its principal revenue from the carriage of goods rather than of persons." Something we've been honking for years!

A materials handling classification has been added to the Fourth Annual Protective Packaging Competition to be held in Philadelphia October 10-12, by the Society of Industrial Packaging and Materials Handling Engineers. The new Materials Handling Contest Division will offer three cash awards totaling \$175. The Harold Jackson Award (packaging which offers the most satisfactory method of protecting machinery against corrosion)

and the Irving J. Stoller Award (most ingenious inter-c packaging) will be offered again this year.

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GUEST EDITORIAL

(Continued from Page 7)

portation, but in many cases there is no inland freight charge. For example, a shipper in Detroit can forward a shipment through the Houston gateway to South America for the same rate as that applicable to a shipment originating in Houston. The Detroit-Houston portion is absorbed by the air carrier. This is also true for any city from New York west to Chicago or Kansas City on the routes of Capital, TWA, and United in combination with Braniff, international service. This vast industrial area can now ship by air via Chicago to Central and South America directly from the plant on one airwaybill for the same rate applicable from New York or Houston and equal or less in cost to Railway Express to Miami and air to destination.

The progressive export manager can quickly see the value of this new concept in export trade both for the present and the future. Now all of the advantages of air transportation can be utilized by his firm. This will no doubt cause some readjustment in the present organization of exporting firms and forwarders. Firms which have production plants inland and exporting offices at gateways can now consolidate by exporting directly from the inland factory. For example, why forward a shipment on route to São Paulo from a plant in Cleveland to New York for handling by an export office? That same shipment can move directly from Cleveland via Chicago for the same rate as would be used from New York, thereby saving the inland freight charge from Cleveland to New York. This is one reason some freight forwarders are opening branch offices in inland cities instead of concentrating at gateways.

All companies engaged in exporting should thoroughly investigate this progressive development in international air cargo service. For it may not only mean improved service, but also lower costs to satisfy the customers abroad.

U. S. OVERSEAS AIR CARGO

(Continued from Page 13)

exports by air of domestic and foreign merchandise and general imports of merchandise by air, by specified countries of destination and origin, respectively. The countries are arranged by continent; and for the sake of brevity only selected countries of importance in air trade with the United States are shown individually, the remainder being grouped as residual items under each continent.

The 1947 summary shown in Table 12 (published next month) reveals much information concerning the geographical pattern of United States foreign trade by air. It will be observed that 25.6 million pounds were exported from the United States to other areas of North America, constituting 58.1 percent of the total shipping weight of

United States air exports. Two countries, Cuba and Mexico, alone accounted for 40.2 percent of the weight of total air exports from the United States. Next in importance as a market for United States air exports was South America, which represented 25.2 percent of the total weight. Europe accounted for 10.9 percent of total United States air export tonnage in 1947, while Asia, Africa, and Australia, New Zealand and Oceania, in that order, made up the remaining 5.8 percent. On the basis of value of air exports, the six continents ranked in the same order as in the case of shipping weight, but the relationships among the individual countries and continents were somewhat different. Europe, with Belgium and Luxembourg and Sweden predominating, accounted for 24 percent of the total value of United States exports by air, a much larger share of total than in the case of shipping

Table 10—Value of United States General Imports of Merchandise by Air, Leading Commodities, January—October 1946¹

(In thousands of dollars)

Commodity	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Diamonds, rough or uncut	536	551	664	150	234	151	198	...	...	...
Diamonds, cut but unset	1,093	826	1,064	987	864	732	850	1,042	1,191	510
Semiprecious stones, other than topaz, cut but not set	218	210	294	245	305	662	130	406	254	319
Watches and watch movements	503	404	510	358	240	154	317	296	301	720
Watch cases, etc., base metal	273	340	266	223	102	...	...	...	...	104
United States articles, returned, n.o.s.	399	138	218	251	147	275	1,227	352	469	521
Platinum grain and nuggets	130	...	...	...	...	308	288	257	107	281
Marten fur, unstripped	...	111	313	182	111	222	...	...	...	...
Artworks, for exhibition or education	...	155	...	...	...	...	...	...	...	...
Leather gloves, hand made	...	...	127	...	...	106	124	106	...	...
Emeralds, rough or uncut	...	...	276	...	...	...	271	...	...	...
Natural pearls	...	...	...	133	...	...	...	...	...	...
Fox fur, other than silver or black fox	...	...	...	...	140	...	...	...	...	...
Mink fur, unstripped	...	...	...	...	783	...	...	...	...	101
Cultured pearls and parts	...	...	...	...	216	332	...	...	...	...
Platinum ingots, bars, sheets or plates	...	...	...	...	232	175	195	133	...	...
Floral essence (perfume materials)	...	...	...	...	108	153	...	...	118	...
Citronella oil	...	...	...	...	...	...	122	...	...	...
Crude minerals, n.o.s.	...	...	...	...	...	...	...	...	114	...
Stamps, foreign, postage or revenue, and foreign government stamped envelopes	...	...	...	...	...	...	...	...	110	...
Perfumery containing alcohol	...	...	...	...	...	...	...	106	...	...
Book manuscripts, n.o.s.	...	...	...	...	...	...	...	112	...	...
Diamond hort.	...	...	...	...	...	...	...	...	297	...

¹ The table is restricted to individual commodities with monthly import value of at least \$100,000. In the case of "watches and watch movements" several individual commodity groups, each showing the required minimum value, were combined. The total shown above, hence, does not include the value of all watches and watch movements imported.

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Table 9—Value of United States General Imports of Merchandise by Air, by Commodity Group, and by Quarter, 1946 and 1947
(In thousands of dollars)

Group No.	Commodity description	1947					1946				
		Year	6th quarter	3d quarter	2d quarter	1st quarter	Year	6th quarter	3d quarter	2d quarter	1st quarter
61	Animals and animal products, edible.	1,319	405	160	606	146	552	205	132	167	68
63	Leather & manufactures.	1,186	296	102	346	407	3,754	1,234	809	105	706
65	Furs and manufactures.	5,046	889	1,310	1,875	973	2,625	306	422	1,879	210
69	Animals & animal prod., inedible, n.e.s.	1,631	365	253	153	460	307	127	50	81	49
13	Vegetables, fresh or frozen.	77	1	1	8	71	4	0	3	1	1
14	Vegetables & preparations, n.e.s.	25	1	1	14	11	5	1	7	1	1
15	Fruits, fresh or frozen.	101	12	87	11	11	151	26	96	9	0
16	Fruits & preparations, n.e.s.	6	1	6	1	1	42	1	42	1	1
17	Beverages.	20	4	0	3	0	7	3	3	1	1
19	Veg. food prod. & beverages, n.e.s.	21	7	1	3	11	51	25	5	1	1
22	Drugs, herbs, leaves, roots, etc.	208	76	38	52	42	87	60	9	8	10
25	Veg. oils & waxes, inedible.	963	335	15	272	343	700	230	216	224	30
26	Nursery & greenhouse stock.	339	61	142	91	45	345	73	72	82	18
27	Tobacco & manufactures.	549	122	14	8	9	46	19	8	13	26
29	Veg. prod., inedible, exc. fiber & wood, n.e.s.	199	20	19	45	112	198	72	23	45	16
32	Cotton weaving apparel.	163	77	34	26	26	216	37	48	103	30
33	Cotton & manufactures, n.e.s.	131	60	22	25	24	115	70	14	22	9
35	Wool weaving apparel.	216	96	26	23	57	261	90	50	45	67
36	Wool & manufactures, n.e.s.	56	10	16	20	10	139	45	26	21	47
38	Silk & manufactures.	427	220	66	67	74	509	143	79	103	184
39	Textile fibers & mfrs., n.e.s.	571	157	119	99	190	668	217	182	175	94
40	Wood & paper.	49	14	11	8	16	33	17	8	6	8
57	Prec. & semi-precious stones & imit. & ind. diamonds.	11,155	4,178	2,851	1,768	2,356	19,017	2,786	5,263	5,264	5,003
59	Nonmetallic minerals, n.e.s.	155	54	37	28	36	207	32	155	11	9
65	Prec. metals and plated ware, exc. jewelry, gold or silver ore and coin.	4,651	319	540	3,025	767	4,682	2,040	1,366	813	634
67	Jewelry, including precious metals.	227	64	45	39	78	882	215	229	219	229
69	Metals and mfrs. exc. mach. & veh., n.e.s.	145	60	28	23	32	95	24	31	30	10
78	Machinery & vehicles.	217	68	15	39	55	104	39	31	16	18
83	Medicinal & pharmaceutical preps.	1,063	78	164	457	374	1,008	268	340	205	144
87	Soap & toilet preparations.	382	151	44	112	270	1,035	303	457	245	32
89	Chemicals & related prod., n.e.s.	25	1	11	4	9	58	37	11	10	1
91	Photographic & optical goods.	2,426	870	792	314	450	804	369	143	163	129
93	Musical instr., toys and sporting goods.	186	101	36	34	15	87	58	22	6	1
95	Books & printed matter.	1,611	291	94	1,078	148	706	151	364	116	133
96	Watches, clocks & parts.	40,756	13,395	9,818	8,674	8,860	13,872	5,577	2,386	2,534	3,375
97	Art works.	1,039	654	518	365	402	1,266	554	204	166	314
98	Articles originating in U. S. returned.	10,054	3,060	2,415	2,147	2,432	5,268	1,712	2,060	958	788
99	Misc. commodities, n.e.s.	827	260	152	333	82	440	115	94	114	117
Total.		89,529	27,967	20,131	21,998	19,435	60,460	17,298	15,616	14,539	13,007

¹ Less than \$500.

weight. Asia and South America also showed higher percentages of total United States air exports in terms of value than in terms of shipping weight, while North America showed a considerably lower percentage.

With respect to United States imports by air during 1947, Table 12 discloses that in terms of shipping weight, the United States purchased the greater part of its airborne goods from other countries in North America—81.6 percent of the total air import tonnage. The leading countries of origin were Cuba, Canada, and Mexico. Next to North America in terms of weight of shipments by air to the United States ranked Europe, South America, Asia, Africa, and Australia, New Zealand and Oceania, in that order. In terms of import value, however, the picture was much different. Air imports from Europe constituted 70.5 percent of the total value of United States air imports. Switzerland alone made up nearly one-half (47.9 percent) of the total.

(Continued Next Month)

Table 11—Relative Importance of Leading Commodities in the Air Import Trade of the United States, 1946-47

Group No.	Commodity description	Rank in 1947	Rank in 1946	Combined value in 2 years, 1946-47 (\$000)		Percent of value of all commodities, 1946-47
				Rank in 1947	Rank in 1946	
96	Watches, clocks & parts.	1	2	1	1	\$54,628 36.4
57	Precious and semi-precious stones and imitation and industrial diamonds.	2	1	2	2	30,172 20.1
05	Furs and manufactures.	3	5	4	5	7,973 5.3
65	Precious metals and plated ware, excluding jewelry, gold or silver ore and coin.	4	3	3	3	9,333 6.2
91	Photographic and optical goods.	5	10	6	8	8,230 2.2
97	Art works.	6	6	7	7	3,307 2.1
09	Animals and products, inedible, n.e.s.	7	16	10	10	2,053 1.4
95	Books and printed matter.	8	11	8	8	2,377 1.6
01	Animals and animal products, edible.	9	14	11	11	1,971 1.2
03	Leather and manufactures.	10	4	5	5	4,935 3.3
Total.						\$119,679 79.8

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The shipper who doesn't pay attention to the problem of packaging isn't being smart at all. Gaining know-how for shipping by air can be a very profitable thing. The difference between a good and bad package is not only measured by the safety of its contents, but by its light weight which reflects in lower shipping costs.

The modern shipper knows that . . .

Proper Packaging Means

PACKAGING is becoming a major factor for the development of new commodities and new markets in air freight. To understand its relationship to air freight requires a thorough knowledge of the background and present problems of this new transportation medium. To assist and to stimulate thought in this respect is the primary purpose of this article. Packaging ingenuity can do much to assist in speeding up the growth of air freight.

Air freight is not an adjunct to any other transportation system; it is a new business, selling a new service, creating new employment opportunities, new merchandising methods, new markets,

and providing an expeditious means of freight transportation. No aspect of our economy will remain unaffected by this progressive mode of transportation. Consequently, the packaging problems of this rapidly expanding industry should receive immediate thought and consideration by all container producers.

The history of air cargo can probably be said to have begun in 1927 when a predecessor of the Railway Express Agency inaugurated scheduled air shipment as an appendage to its service. Earlier efforts in the air shipment field were confined principally to experimentation, with the volume of traffic insignificant. Generally speaking,

the prewar era of transportation reflected an apathy on the part of airlines, with regard to the development of air cargo. Nevertheless, the limited knowledge gained through experience was of some value in initiating the extensive program of wartime air transport which was used so successfully for shipment of military equipment and supplies.

Improved plane design, new cargo handling methods, improved packaging, expeditious loading and unloading, and other important phases of air shipment which were developed during the war, gave a much greater impetus to the present day growth of the air freight industry. Another important factor in the postwar growth of the air freight industry which can be traced to World War II, is the increased consciousness of the potentiality of the airplane as a freight carrier. The realization of practical air shipping has grown with the increased number of airports capable of accommodating the larger air-freighters and their cargo. In this connection, postwar experience indicates that the future trend in airport design may be planned air freight facilities separate from passenger facilities.

The generic term "air cargo" may apply not only to air freight, with which we are particularly concerned, but also to air parcel post and air express. These three types of air shipment are all available for public use. The type selected by the shipper is contingent upon the type of air transportation that is likely to prove most beneficial for specific commodities. All of these methods have a definite place in the air shipping pattern.

Air express is a nation-wide transportation system operated by the Railway Express Agency through contracts with certificated airlines. This type of air shipment provides the fastest pos-



THESE CUT FLOWERS, shipped via Trans-Canada Air Lines by a British Columbian grower, are packed in sturdy though light cartons. Result is expanded flower markets.

Money in the Bank



THESE CARTONS of fresh fish are marked "Do Not Delay" and "Perishable." Note loading procedure in American Airlines plane.

sible air-rail schedule, partially due to the extensive facilities afforded by the 23,000 Railway Express Agency offices located throughout the country.

The air parcel post service was inaugurated September 1, 1948. This method of air shipment provides overnight delivery of small packages to almost any place in the United States. These packages are mailed at any Post Office and are delivered to the doorstep. Air parcel post shipments receive the same preferential handling enroute as that accorded air mail. The weight limitations are not less than eight ounces and not more than 70 pounds. Packages must not exceed 100 inches which includes the combined length and girth. This type of shipment also provides service to noncontiguous areas and permits shipping of small packages to international destinations at air speed.

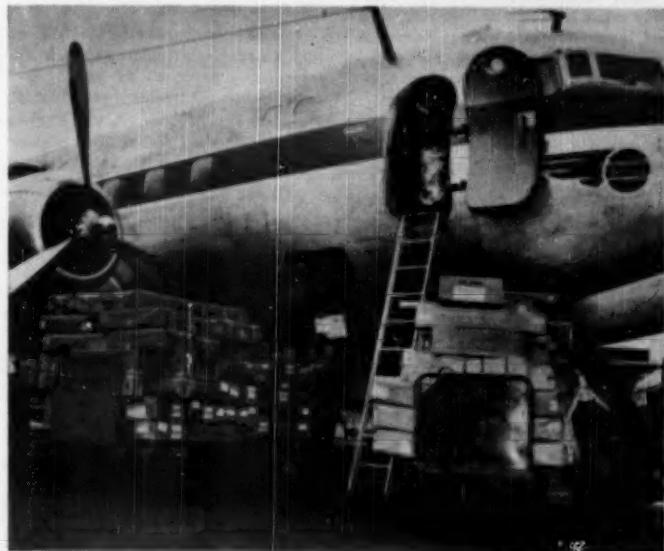
The term "air freight" applies to cargo that is neither air express nor air parcel post. It is a new basic method of shipping designed to move merchandise at air speed in a regular flow on a volume basis. Merchandise moves on an airport-to-airport basis. Pickup and delivery service is available at additional cost. The size and packaging of commodities are limited by the size of the fuselage and its doors, plus the weight-load limit of the cargo plane. The air freight industry is still too new for all of its potentialities to have been explored, but additional uses and advantages are turning up from day to day. It has two distinguishing features —two general characteristics which are

stressed to the shipper; they are *speed and specialized service*.

Although the primary interest of the domestic air industry has been its passenger traffic, increasing attention was also given, immediately after the war, to the development of air cargo service. The tremendous increase in cargo volume since 1946, as a result of this increased attention, has since become an outstanding feature of the domestic air lines history. Today, air freight is the

most rapidly growing segment of America's commercial aviation industry. Combined air freight and express ton-miles of the 16 certificated domestic trunklines increased from approximately 38.1 million in 1946 to 122.9 million in 1949. During the same period, the air freight ton-miles of the three all-cargo lines now certificated by the CAB rose from an estimated 10.4 million to 36.4 million. These data typify the

(Continued on Page 223)



SHIPMENTS bound for such foreign points as Belgium, Yugoslavia, Romania, Hungary, Greece, Israel, and Morocco, are loaded into the belly of a Sabena transport at Idlewild.

CALIFORNIA

(Continued from Page 8)

and vegetables for the backhaul together with great possibilities in the imports and exports flowing through the state's world famed ports.

The Oakland Chamber's Aviation Committee forthwith, in 1946, held the first Pacific Coast Air Freight Forum, and followed it with continuing promotion aimed at encouraging and assisting the development of air freight, both domestic and international. In the first year of the promotional program, air freight moving through Oakland Municipal Airport moved from a handful to 5,000,000 pounds, and the progress in succeeding years has been most encouraging.

The committee's promotional program covers a wide field of effort, ranging from assisting the carriers and shippers in solving individual and industry problems, and arranging meetings spotlighting air cargo, to publicizing its achievements. The newspapers and radio stations and other media have been enlisted in the program and they have helped immeasurably in spreading the word.

Cosponsoring the California Air Freight Clinic and Air Freight Fair with the Oakland Chamber Aviation Committee is the California Aeronautics Commission; and the Air Cargo Institute of California, the Oakland Board of Port Commissioners, and the industry are cooperating to the fullest.

Early announcements of the state-wide event have aroused wide interest and inquiries have been received from as far distant as Bombay and Brussels.

The purpose of the event may be stated briefly and to the point:

To increase the use and benefits of air freight to the economy of the state and the nation.

Its aims are equally to the point:

To correct as far as possible, through the development of new California originated tonnage, the traditional unbalance in the transcontinental flow;

To convert to the air a greater portion of the cut flower traffic, which in 1945 recorded a \$450,000,000 retail sale value in out of state markets;

To penetrate further the perishables and seafood field, and to develop this into a year-round movement;

To attract a greater and continuing eastbound movement of hard freight from the state's growing industrial centers, which in 1947 set a \$3,994,981,000 value added by manufacture mark;

To secure at least the top half of the output of the state's fast-developing apparel industry.

The program is being arranged to insure a maximum of interest from the present and potential shippers, growers, packagers, aircraft manufacturers, producers of handling equipment, air terminal operators and others not directly engaged in the actual air transportation of cargo. The carriers also will have their panels and a vast amount of interesting and enlightening discussion is assured. In the interest of securing results, only practical matters have been selected for panel discussion and those which fall in the dream category have been banned.

Highlights of the panel program include:

- First release of an exhaustive study of air freight economics conducted for the California Aeronautics Commission by Harry Kart, aviation consultant and air cargo pioneer.

- Talks on terminal handling at major airports and intermediate fields, including a paper on the ground terminal developed by Lockheed Aircraft engineers.

- Case studies by executives of shipper firms illustrating the relative costs of shipping by air and surface, and

the marketing, reduction of inventory, speed and other advantages gained by air.

- Announcement of new freight aircraft now available to the industry and what they can mean rate and service-wise.

- Discussion of the services and procedures of international air freight highlighted by case studies.

- Report on recent discoveries in precooling and what they mean to air-borne perishables.

- Discussion of the handling of insurance claims, losses, and damages in air freight.

- Talk on recent developments in packaging for air freight.

- Report on the present and future of the ground transportation phase of air freight.

- Discussion of the potentials and problems of the multi-million dollar long-haul cut-flower industry that has been developed by air freight.

Heading the panels and flanking them on the platform will be leading national and international authorities, selected by a Clinic Committee from the Air Cargo Institute of California.

The panel leaders will present formal papers, which at the conclusion of the Clinic, will be compiled together with factual reports on the discussion, into book form. The books, a complete record of the Clinic, will be available to interested parties. The panel members will join with the leader in answering questions from the audience.

Luncheon speaker at the Clinic which will be held at the Hotel Claremont, August 19, will be Wayne W. Parrish, the aviation publisher; and Governor Earl Warren of California, who has been a moving spirit in air freight development programs, has been invited to open the affair.

The Air Freight Fair will be held at Oakland Airport Sunday, August 20, where more than 100,000 square feet of hangar and ramp space has been donated by the Oakland Board of Port Commissioners as another of its nu-



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merous contributions to the aviation industry. Initial response to the Air Freight Fair announcement assures a wide variety of booth exhibits and ramp demonstrations. The demonstrations will include the actual loading and departure of freighters speeding cargo to distant markets.

For the benefit of the industry and its present and prospective customers, a preview period of two hours will be set aside for industry guests prior to the opening of the Fair to the public **AT NOON**.

The Air Freight Fair will be held on a site hallowed by early pioneering in air freight and later by the Naval Air Transport Service's magnificent airlift support of the war in the Pacific.

Principals in the planning of the Clinic and Fair include:

The California Aeronautics Commission—John Felton Turner, of Oakland, chairman; Bruce Church, of Salinas; Earl Pruden, of San Diego; Norman Larsen, of Burbank; and State Director of Aeronautics Warren E. Carey.

The Oakland Chamber of Commerce Aviation Committee—Fred B. McCormac, chairman, and the Clinic Committee headed by William H. White, with Howard Waldorf as secretary-manager.

The Air Cargo Institute of California Clinic Committee—appointed by President Harold Angier and headed by L. R. Hackney.

The Oakland Board of Port Commissioners—Claire V. Goodwin, president; Dudley W. Frost; Stanley Burgraff; James F. Galliano; H. W. Estep; and Port Manager Arthur H. Abel.

AIR EXPRESS vs. RY. EXPRESS (Continued from Page 11)

at least three types of containers deemed suitable for air shipment of fishery products. Made of fiberboard and designed to hold about 10 times their weight in fish, they were insulated to retard the temperature rise during the relatively short time in transit. Two

types could be refrigerated with dry ice, i.e. solid carbon dioxide. The cost of these containers per unit of fish held in them was approximately equal to that of a box or barrel. The containers were intended to be used once and then discarded. Fish to be shipped in these containers were chilled to just above freezing temperature and packed in containers which were then securely sealed. The insulation by itself or with the aid of dry-ice refrigeration helped to maintain the fish at a safe temperature.

Air shipping containers

Type A container—This container

was made to hold 40 pounds of fish and consisted of a corrugated fiberboard box supported at its eight corners within a larger box of the same type. The space between the inner and outer boxes was one inch at the bottom and sides, and two inches at the top. These boxes were not water-repellent, so it was necessary to pack fish in a watertight bag which was sealed and placed in the inner box. This inner box was then tightly sealed with gummed tape and placed in the outer box and the corner supports put in place. On the top of the inner box was placed a piece of dry ice weighing about seven pounds.



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This dry ice was held in place by a specially constructed tray of corrugated fiberboard. The outer box was then tightly sealed with gummed tape. The cold vapors from the evaporating dry ice circulated freely about the inner box and cooled it. In effect, the inner box containing the fish was floated within the outer box.

Type B container—This container, also, utilized an inner and outer box with an air space between for insulation. It differed from type A in that the air space was compartmented and the boxes were made of water-repellent fiberboard. A space holding a maximum of six pounds of dry ice was provided in the top of the inner box. Due to the manner of construction and the fact that the fiberboard was water-repellent, no inner, water-tight bag was necessary when packing fish. This container held about 35 pounds of fish.

Type C container—This container

was made to hold 40 pounds of fish and consisted of a corrugated fiberboard box within a similar but larger box. A pad of corrugated paper insulation, one inch thick, was placed between the two boxes so as to fit snugly. The insulation was made in three pieces: a top, a bottom, and a continuous piece which was bent to cover the four sides. Both inner and outer boxes were sealed tightly with gummed tape. This container was not water-repellent, so that fish had to be packed in a water-tight bag within the inner box.

Three types of water-tight bags for use in the inner boxes of these containers were tested. They were made of cellophane, rubber hydrochloride and polyethylene. All were thin films and could be heat-sealed to give water-tight closures.

Railway shipping containers

Wooden boxes and small barrels of the regular type were used to pack the

fish and shellfish sent by railway express. A layer of crushed ice was put in the bottom of the container, the fish were placed on the ice and then the container was filled with more crushed ice before the top was nailed in place.

(Continued Next Month)

PROPER PACKAGING

(Continued from Page 19)

tremendous growth of air shipment. In comparison to the volume of traffic shipped via surface transportation, however, air freight shipments for 1949 were still relatively insignificant—but the growth possibilities stir the imagination. The early months of 1950 continued at high levels, due principally, it appears, to the growing acceptance of air freight by industrial shippers.

Another gauge of air freight growth is presented in the report of a Manhattan-based air forwarder. This company began business on August 5, 1946. The revenues for that year were \$30,000. In 1947 the revenues were \$357,000, and in 1949, \$1,105,000. Income is reported to have reached a new high in March, 1950, and is still rising.

The most obvious advantage offered by air freight is the speed at which products can be delivered. Next in importance is special and expeditious handling. Emanating from these are many more specific advantages. For example, the economies from using air freight which may tend to offset its relatively high rates are faster turnover, wider distribution, elimination of warehouses, reduction in spoilage, smaller interest charges on investment while goods are in transit, more efficient use of working capital because of reduced inventories, and greater profits for both consignee and consignor where time and distance are factors in distribution. In addition, pilferage has been virtually eliminated in domestic air freight shipments.

Although interest among the container manufacturers is increasing, research in this field by progressive con-



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Chicago to New York	2d morning	4½ to 9 days
Detroit to Boston	1st morning	2½ to 6 days
Boston to Nashville	1st morning	1½ to 4 days
Los Angeles to Washington	1st morning	2½ to 6 days
Washington to Memphis	2d morning	4½ to 9 days
Dallas-Fort Worth to Chicago	1st morning	1½ to 4 days
	1st morning	2½ to 6 days

tainer producers has hardly begun, principally because air transportation has not yet represented a sufficient volume to justify extensive expenditures for research and development. Therefore, it remains for the airlines themselves to take the lead in working with the shippers and the container manufacturers in developing suitable packaging.

To appreciate the reasons for the phenomenal growth of air freight, it might be advisable to compare air delivery time with surface delivery time. One of the larger air carriers has published the speed comparison schedule at the top of this page.

Speed, however, is not determined solely by how fast an airplane can travel but by the over-all elapsed time between pick-up from original consignor and delivery to the consignee. Surface delivery time, and the loading and unloading time, must be shortened. New devices are needed, and are now being developed, to reduce this ground time by speeding up loading and unloading operations. Pickup and delivery techniques are also being improved. Freight forwarding companies are moving into the air freight field.

Air cargo was frequently loaded and unloaded by hand in the early postwar period, but new devices have since been adopted to reduce handling time. Among these devices are portable belt conveyors, escalators, chutes and forklift trucks for loading and unloading, and roller systems for moving cargo within the plane.

Air freight is basically a less-than-carload-lot business; consequently, legible marking is of prime importance in maintaining high speed service. If the name of the addressee appears on two sides of the package much lost motion can be saved.

Although speed is the basic advantage of air freight, specialized service in the pick-up of commodities is an added inducement to shippers. The practice of picking up commodities at the close of each day's operation may be impractical in the case of air freight as an accumulation of shipments at the end of the day may create an airport bottleneck. In such cases, shipments are picked up during the day by a coordinated trucking service, or moved to air terminals by the consignor's own truck. This type of service has been a rapid builder of good will and has become

an integral part of the air freight merchandising program.

One of the more specific stimulators to the rapid growth of air freight is that new markets are being brought within the practical orbit of the shipper. With the use of air freight, markets for many products are limited only by the imagination and initiative of the seller. Air freight will transport almost any commodity to most of the larger cities all over the world. Timely or perishable articles can be transported to distant markets within a matter of hours. For example, heretofore the traditional method of distributing newspapers confined or limited the market to areas a few miles from the point of publication. Today, newspapers and other timely publications can appear simultaneously on news-stands in every section of the country—thanks to air freight. Similarly, this shipping method has brought Western markets two to five days nearer Eastern manufacturers. In addition to securing new sales outlets, rapid overnight delivery service on reorders makes

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air shipping desirable as an aid in holding seasonal markets.

Air freight not only opens new markets, but also presents the possibility of lower marketing costs and new merchandising practices. Lower costs are realized through reduced inventories, warehousing, mark-downs, etc. Changing merchandising methods always create new and stimulating advertising possibilities. Merchants have begun to capitalize on air freight in the presentation of their merchandise. Perishables have added value when tagged "Air-fresh with Airfreight." Likewise, fashion appeal has been stimulated when styliner merchandise such as coats, dresses, millinery, shoes, etc., have been airborne from fashion centers and appropriately noted by such labels as "Transported by Air."

Cost is a primary factor in selecting the method of transportation to be used. The differential in rates between air and other methods of transportation has been narrowing in recent years. Herein probably lies one of the fundamental reasons for the extremely rapid growth of the air freight industry. Moreover, as will be discussed, the use of air freight may permit reduction or even elimination of packaging costs.

A Detroit auto parts dealer is shipping regularly via air after he discovered that shipping commodities to the East Coast was less expensive due to reduced packaging requirements for small shipments. Also, a garment manufacturer experienced a saving by eliminating over-packaging, pressing time, etc., due to the specially constructed racks on which his commodities could be moved from the factory to the final destination. Air freight is building upon these types of regular repeat business, and emergency shipments are becoming less important.

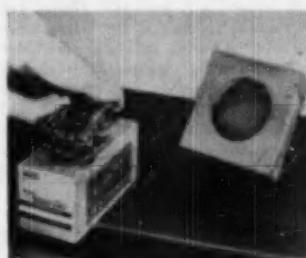
Besides high rates, some of the principal disadvantages in shipping by air are inability to obtain direct air cargo service to many points; slow ground handling and delivery service on some occasions; lack of facilities at airports for warehousing and precooling; and unreliability of schedules in event of inclement weather.

Shipping costs for typical commodities transported 1,500 miles via air freight, as reported by one of the major air freight carriers, are:

Pair of women's gloves (1 lb.)	\$.16
For cost (5 lbs.)	.36
100 baby chicks (12 lbs.)	1.82
Typewriter (36 lbs.)	5.45
Spinach (prepared 10 oz. package is equivalent to 1.8 lbs.)	.08
Cat flowers (50 lbs.)	7.58
Woman's dress (1 1/2 lbs.)	.23
Strawberries (1 lb. crate)	.67
Lobsters (1 1/2 lbs. each)	.23
Newspapers (25 lbs. can)	3.79

NEW EQUIPMENT FOR THE *Shipper & Carrier*

INLAND WIRE TYING MACHINE—A new-type carton for 25-pound coils of tying wire has been developed. It serves the dual purpose of protecting the wire and providing a speedy wire dispenser in the shipping room. A departure from the practice of delivering tying wire without



Packaged wire coils

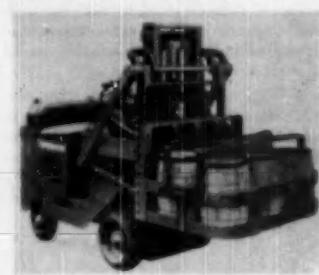
wrapping or protection, Inland inserts 25-pound coils into a heavy fibreboard shipping carton for use with the Inland Model D Wire Tying Machine.

When received the perforation is easily broken, exposing the loose end of the coil. The operator merely draws the wire

out of the carton as required. No tangling either.

Robert Gair Company, Inc.—Gair reports that Electric Auto Lite Company, Toledo, packs its line of automotive wire and cable in new Gair-designed packages called *Auto Lite Silver Line*. Each item is packed in a carton of silver foil printed in dark blue and red. Foil surface repels oil and finger marks. The cartons are of Tuf-Bord, an extra-strong and rigid folding paperboard.

Towmotor Corporation—A half-dozen 200-pound kegs may be picked up, unloaded, stacked, or transported, without the use of a pallet. This is possible with



Six keg-on-a-pallet

Towmotor's latest materials handling development—a guide frame mounted on an Unloader Accessory which may be lowered over the kegs. As the Unloader is retracted, the guide frame pulls the kegs against three rubber-covered shoes which project from the face of the carriage. Result: six kegs are held securely in position by the guide frame and firmly pressed against the shoes. Shoes and guide frame are easily detachable.

These air freight rates are determined on an airport-to-airport delivery, and do not include pick-up and delivery charges. Coordinated trucking facilities are frequently offered on a low-cost per hundred-pound basis.

A wide variety of cargo can be shipped by air. Some commodities, however, will not be accepted for carriage by air while others are prohibited, due to the nature of the product itself, unless special packaging is provided and clearance for air shipment is obtained. In these categories are such items as explosives, inflammables, acids, radium, radioactive or magnetic materials, small arms and ammunition, and other items which are considered hazardous to the carrier or to its personnel.

One airline official facetiously remarked that "we have probably flown every member of the animal kingdom except a live dinosaur." A representative of another air freight carrier said that they have carried such diverse items as goats, girdles, gorillas, dyna-

Editor's Note: This article is based on a recent report by the Office of Domestic Commerce in its *Containers and Packaging*.

mos, ship parts, hand-made women's gloves, watches, handbags, and latest Paris fashions. Baby chicks by the hundreds of thousands travel the skyways. In this way, the problem created by the regulatory requirements of feeding every 72 hours is eliminated.

Products that lend themselves to air transportation include these four categories:

- Perishables, such as flowers, vegetables, and other produce.
- Emergency goods, such as drugs.
- "Style" and "timely" merchandise, such as clothing, newspapers, etc.
- Heavy goods, such as machinery, maintenance parts, etc.

Agriculture's principal interest in air transportation is in the speed with which the airplane can transport perishable products to distant markets, and in the opportunities provided for opening new markets for their surpluses. Air transport may permit the marketing of completely vine-ripened fruits and vegetables at premium prices.

(Concluded Next Month)

FREE

The numbered paragraphs below correspond with the numbers appearing in the coupon at the bottom of this page. To order one or more pieces of literature at absolutely no charge to you, just encircle the corresponding number in the coupon, fill in the required information, and mail it in. *Air Transportation* will do the rest.

- 1 A comprehensive and fully illustrated booklet, *Package Engineering*. Slanted toward the user, it nevertheless gives a detailed study of the technical aspects of corrugated box design. The book fills 24 pages and features 46 illustrations.
- 2 *The Co-Pilot*, a free directory of 1,600 airports in 26 states. Contains such data as grades of aviation gas handled, class or size of fields, hours during which service can be expected, etc.
- 3 New York State airport map and directory. Measures 20" x 21". Supplies all needed information concerning airports in that state.
- 4 Reference file of air express uses. Put up in handy form. An excellent file for the progressive traffic man. Presents interesting case histories which should be of value.
- 5 Periodic inspection record for maintenance of fire extinguishers. Contains a handy chart for any firm with fire extinguishers on its premises. Don't forget: fire extinguishers are emergency equipment, and if they're not in working condition a lot of freight can go up in smoke.
- 6 Sample back number of the *American Import & Export Bulletin*, giving news of developments in the foreign trade industry. Covers Customs, Commerce, Agriculture, Treasury, and State Departments thoroughly. Reports on changes in laws, rules, regulations, etc.
- 7 Official Civil Aeronautics Board regulations of international air freight forwarders. Complete text, covering definition, classification and exemption, limitations and conditions, letters of registration, insurance, and general data.
- 8 Official Maritime Commission regulations of freight forwarders (General Order 72). Text covers definition, registration, billing practices, consolidated shipments, special contracts, receipts, brokerage, etc.
- 9 File-sized booklet designed and written for the purpose of taking the guesswork out of selecting and using corrugated and solid-fibre shipping cases. Includes the advantages, applications, composition, forms, properties, and sealing techniques of case sealing adhesives for hand or machine sealing operations. Illustrated.
- 10 Rope reference chart which gives specifications on manila, nylon, and sisal ropes. Measures 17" x 27". It offers such data as rope diameter, circumference, approximate net weight per 100 feet, and working strength.

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AIR FREIGHT FORWARDERS

AIR CLEARANCE ASSOCIATION,
INC.: George Wohlrab, formerly with Globe Shipping Company, Inc., and Hensel, Brucksma and Lorbacher, Inc., has joined ACA as import manager. He has a quarter-century's experience in the industry. Wohlrab will be stationed at the firm's Idlewild office, 120-08 131st Street, South Ozone Park, New York.

Peter A. Bernacki: Bernacki has hailed the First United States International Fair at Chicago as a long step forward in emphasizing the importance of international trade to our economy. He said that the fair in the Windy City proved that Chicago, as an inland port, was sparking the Middle West to reach out for a bigger stake in the international movement of goods. A highly industrialized area and one of the key centers of the country, Chicago has become cognizant of the fact that it is only a few hours' distance from buyers and suppliers in Latin America, Europe, Africa, and the Near, Middle, and Far East.

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17.2

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★ EXECUTIVE ★

Boeing—John O. Yeasting, formerly assistant to the president, has been elected a vice president.

Frank B. Hall & Co., Inc.—Arne Fuss succeeds the late Arthur J. Sullivan as president of this firm of insurance brokers and average adjusters. Edward S. Benfield has become chairman of the board.

Italian Airlines-LAI—Alfredo de Lancellotti, who spent three decades in the service of Thomas Cook & Son, has taken over the post of general manager of the New York office. Claude E. Fusco, formerly with Pan Am and the Italian Steamship Line, is general traffic and sales manager.



Fuss



de Lancellotti

Glenn L. Martin—G. T. Willey, vice president-manufacturing, has become assistant general manager.

Pan American—John C. Leslie, vice president, has been made a member of the board. He also succeeds the late Howard B. Dean as vice president-administration. Assisting Leslie as deputy is Vice President Erwin Balluder.

★ CARGO ★

Panagra—Dr. Ernesto Caceres B. has taken over the post of air mail superintendent with offices in Lima. He formerly headed the International Service of the

C-47 Operators



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General Administration of Postal and Telegraphic Communications of Peru, and is the author of two books on postal subjects.

Trans-Canada—Hugh W. Burgoine, ex-cargo sales representative in Vancouver, has been shifted to Chicago where he heads TCA's cargo sales.

★ SALES ★ TRAFFIC

Air France—David Delaney has taken over the post of sales promotion manager, North American-Caribbean Division. Robert W. King succeeds Delaney as Eastern District traffic manager. Alfred de Cabrol, formerly manager in Colombia, takes over the top spot in Havana.

Braniif—Organizational changes have these four in new key positions: John Long, Argentine manager; Don C. Grefe, manager in Panama and Ecuador; Pedro A. Diaz, acting district traffic manager in Panama; and Paul Parsons, Jr., manager at Guayaquil.

Eastern—William L. Morissette, Jr., has been named traffic-sales manager for the New England States.

Flying Tiger—Robert Fitzgerald has been appointed district sales manager at Hartford.

KLM—Herman R. Semmelink has been appointed representative for Canada. William deMier has been transferred to a new post in Europe.

Northwest—James N. Ravlin, formerly with American, named assistant to Vice President-Sales Amos Culbert. Duncan H. Taylor appointed city sales manager at Edmonton.

Pan American—James Fulton Montgomery now serving as district traffic and sales manager in the United Kingdom.

Sabena—Robert Bonnaveutre, ex-Brussels, now representing the line at Gander. James Haggins has been added to the traffic staff in New York.

Swissair—H. Victor Baertschi has joined the passenger relations department in New York, specializing in travel agency relations.

TWA—John G. Hearne has been appointed sales promotion manager for the Middle and Far East, and Philippe Brunswick has been named manager for the European region.

Western—Keith Jones has been pro-

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MAILBAG MEMOS

(Continued from Page 4)

"Your editorial is grand. It is one of the best things I have ever seen."

Longdon P. Marin, Jr.
Washington, D. C.

Satisfied Readers

"May we express our appreciation and commend you on your publication putting special emphasis on the airfares and the international rate tables shown therein."

C. A. Schuyler
Traffic Department
National Biscuit Company
New York, New York

"I like to keep up on all new developments pertaining to transportation, particularly air, and for your information I have all the copies of **AIR TRANSPORTATION** since it was born in 1947, and if more of the traffic news were to take up more space there would be more in traffic would be broadened a great deal. To me it is better than any novel or book ever printed."

Harry Cotterell
Newark, New Jersey

Air Mail

"The all mail article in your July issue (*Bottleneck on the Ground*) hits the spot. The other day I received an air mail letter from Boston four days after the postmark on the envelope. An ordinary three-cent letter used to do better."

Raymond L. Lantz
Flint, Michigan

moted to the position of Los Angeles district sales manager.

★ MISCELLANEOUS ★

Aviation Division, Transportation Section, New York Board of Trade—Newly elected officers are: George G. Hughes, Shell Oil Company, chairman; James A. Leftwich, vice chairman; John C. Emery, Sr., Emery Air Freight Corporation, treasurer; Henry A. Abrams, MacPeak and Abrams, general counsel; and A. J. Barnard, New York Board of Trade, executive secretary.

Frank R. Brine, Advertising—Formerly ad manager for The Babb Company, Brine has organized his own firm with offices at 270 Park Avenue, New York.

National Air Council—Charles D. Frazer, formerly executive secretary and assistant treasurer, has been named executive vice president.

National Packaging Exposition—Robert D. Handley, advertising manager, Sylvania Division, American Viscose Corporation, has been appointed chairman of the Exhibitors' Advisory Committee, 20th National Packaging Exposition.

Society of Industrial Packaging and Materials Handling Engineers—The following have been elected division presidents of the SIPMHE: Winfield S. Haseler, Curtis Candy Company (Illinois Division); Robert M. Hindman, Crosley Division, Avco Manufacturing Corporation (Miami Valley Division, reelected); Milton A. Oen, Siehoff Packing Company (Missouri Division); F. F. Holt, Birmingham, Michigan (Michigan Division); A. M. Lownsbury, Railway Warehouses, Inc. (Northeastern Ohio Division); and Frederick R. Christian, Lockheed Aircraft Corporation (Southern California Division).

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[REG. U. S. PAT. OFF.]

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(including U. S. possessions and territories)

Air cargo rates quoted are based on prevailing tariff, air
port to airport (see note).

Shipments are exempt, however, that these rates are subject
to change.

All international rates are quoted on an airport-to-airport
service, with the picking and delivery charges wholly apart.

Air carriers whose schedules and rates are included here
are indicated by the letter following the airport symbol (see
below).

AIRPORT SYMBOLS

EDF—Anchorage	MLA—Milwaukee	MSY—New York (La Guardia)
GAL—Baltimore	MEX—Mexico City	MIA—Miami
BGR—Bangor, Me.	MIA—Milwaukee	MKE—Milwaukee
BUI—Beaumont, Tex.	MKE—Milwaukee	MSP—Minneapolis-St. Paul
BOS—Boston	MPS—Minneapolis-St. Paul	MOS—Mobile
BRO—Brownsville, Tex.	MSP—Minneapolis-St. Paul	MTL—Montreal
BTW—Burlington, Vt.	MSP—Minneapolis-St. Paul	MSY—Montreal
CNS—Charleston, S. C.	MSP—Minneapolis-St. Paul	NY—New Orleans
CHI—Chicago	MSP—Minneapolis-St. Paul	NY—New York (La Guardia)
CLE—Cleveland	MSP—Minneapolis-St. Paul	NY—New York (Idlewild)
CRF—Corpus Christi, Tex.	MSP—Minneapolis-St. Paul	ORF—Orlando
CTB—Cut Bank, Mont.	MSP—Minneapolis-St. Paul	PEL—Puerto Rico
DAL—Dallas	MSP—Minneapolis-St. Paul	PEK—Pekin, Ill.
DEN—Denver	MSP—Minneapolis-St. Paul	PER—Peru
DTW—Detroit	MSP—Minneapolis-St. Paul	PHL—Philadelphia
DLE—Duluth	MSP—Minneapolis-St. Paul	PIT—Pittsburgh
EDO—Eduardo, Ariz.	MSP—Minneapolis-St. Paul	PR—Port Royal
ELP—El Paso	MSP—Minneapolis-St. Paul	PVD—Providence
EVV—Evansville, Ind.	MSP—Minneapolis-St. Paul	PTC—Portland, Or.
FWA—Fort Wayne, Ind.	MSP—Minneapolis-St. Paul	TYO—Tokyo, N. S.
FTW—Fort Worth	MSP—Minneapolis-St. Paul	SLC—Salt Lake City
GPK—Grand Forks, N. D.	MSP—Minneapolis-St. Paul	SAT—San Antonio
GRW—Greenwood, Minn.	MSP—Minneapolis-St. Paul	SFO—San Francisco
GUL—Gulfport	MSP—Minneapolis-St. Paul	SAV—San Juan
HAT—Hot Springs, Ark.	MSP—Minneapolis-St. Paul	SEA—Seattle
HOU—Houston	MSP—Minneapolis-St. Paul	SGP—Singapore
HHR—Honolulu	MSP—Minneapolis-St. Paul	SHV—Shanghai
IND—Indianapolis	MSP—Minneapolis-St. Paul	SLC—St. Louis
JAN—Jackson, Miss.	MSP—Minneapolis-St. Paul	SNA—Sana'a
JAK—Jacksonville	MSP—Minneapolis-St. Paul	SPO—Santiago
KCN—Kansas City, Mo.	MSP—Minneapolis-St. Paul	STO— Santo Domingo
KIN—Kinston, N.C.	MSP—Minneapolis-St. Paul	THA—Tainan
LHD—Laredo	MSP—Minneapolis-St. Paul	TYO—Tokyo, N. S.
LIT—Little Rock, Ark.	MSP—Minneapolis-St. Paul	VR—Vancouver, B. C.
LAX—Los Angeles	MSP—Minneapolis-St. Paul	DCA—Washington, D. C.

AIRLINE SYMBOLS

A—Air France	—
A—American Airlines	AA
AO—American Overseas	AO
AS—Austrian International Airways	AS
BC—British Caledonian Pacific Airlines	BC
BO—British Overseas Airways Corp.	BO
CS—Chicago & Southern Air Lines	CS
C—Colonial Airlines	C
E—Eastern Airlines	E
EA—Express Aeron Interamericana	EA
K—KLM Royal Dutch Airlines	K

Destination	Airport and Airline	RATES (See Note)					
		Per Lb. Per 100 Lbs.	Per Lb. Per 100 Lbs.	Per Lb. Per 100 Lbs.	Per Lb. Per 100 Lbs.	Per Lb. Per 100 Lbs.	Per Lb. Per 100 Lbs.
Aalborg, Denmark	IDL AO ²	1.17	.875	20	8a, T		
	IDL SS ²	1.17	.88	20	Dly		
Aarhus, Denmark	IDL AO ²	1.16	.88	20	Dly		
	IDL BO ²	1.16	.88	20	Dly		
Ahmed, India	IDL AO ²	1.15	.865	20	8a, T		
	IDL BO ²	1.13	.86	20	8a, M, T, Th, F		
Ahmed, Iran	IDL AO ²	1.13	.86	20	8a, M, T, Th, F		
	IDL SS ²	1.12	.86	20	8a, M, T, Th, F		
	IDL BO ²	1.12	.86	20	8a, M, T, Th, F		
	IDL SR ²	1.12	.86	20	8a, M, T, Th, F		
Ahmed, Ivory Coast	IDL AO ²	1.12	.86	20	8a, M, T, Th, F		
	IDL SS ²	1.12	.86	20	8a, M, T, Th, F		
	IDL BO ²	1.12	.86	20	8a, M, T, Th, F		
	IDL SR ²	1.12	.86	20	8a, M, T, Th, F		
Ahmed, Ivory Coast	IDL AP ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SS ²	1.06	.72	20	8a, M, T, Th, F		
	IDL BO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SR ²	1.06	.72	20	8a, M, T, Th, F		
Ahmed, Kenya	IDL AO ²	1.10	.86	20	8a, M, T, Th, F		
	IDL SS ²	1.10	.86	20	8a, M, T, Th, F		
	IDL BO ²	1.10	.86	20	8a, M, T, Th, F		
	IDL SR ²	1.10	.86	20	8a, M, T, Th, F		
Ahmed, Libya	IDL AO ²	1.10	.86	20	8a, M, T, Th, F		
	IDL SS ²	1.10	.86	20	8a, M, T, Th, F		
	IDL BO ²	1.10	.86	20	8a, M, T, Th, F		
	IDL SR ²	1.10	.86	20	8a, M, T, Th, F		
Ahmed, Libya	IDL AP ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SS ²	1.06	.72	20	8a, M, T, Th, F		
	IDL BO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SR ²	1.06	.72	20	8a, M, T, Th, F		
Ahmed, Libya	IDL AO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SS ²	1.06	.72	20	8a, M, T, Th, F		
	IDL BO ²	1.06	.72	20	8a, M, T, Th, F		
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Ahmed, Libya	IDL AP ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SS ²	1.06	.72	20	8a, M, T, Th, F		
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	IDL SR ²	1.06	.72	20	8a, M, T, Th, F		
Ahmed, Libya	IDL AO ²	1.06	.72	20	8a, M, T, Th, F		
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Ahmed, Libya	IDL AP ²	1.06	.72	20	8a, M, T, Th, F		
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	IDL BO ²	1.06	.72	20	8a, M, T, Th, F		
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	IDL BO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SR ²	1.06	.72	20	8a, M, T, Th, F		
Ahmed, Libya	IDL AP ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SS ²	1.06	.72	20	8a, M, T, Th, F		
	IDL BO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SR ²	1.06	.72	20	8a, M, T, Th, F		
Ahmed, Libya	IDL AO ²	1.06	.72	20	8a, M, T, Th, F		
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	IDL SR ²	1.06	.72	20	8a, M, T, Th, F		
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Ahmed, Libya	IDL AO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SS ²	1.06	.72	20	8a, M, T, Th, F		
	IDL BO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SR ²	1.06	.72	20	8a, M, T, Th, F		
Ahmed, Libya	IDL AP ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SS ²	1.06	.72	20	8a, M, T, Th, F		
	IDL BO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SR ²	1.06	.72	20	8a, M, T, Th, F		
Ahmed, Libya	IDL AO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SS ²	1.06	.72	20	8a, M, T, Th, F		
	IDL BO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SR ²	1.06	.72	20	8a, M, T, Th, F		
Ahmed, Libya	IDL AP ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SS ²	1.06	.72	20	8a, M, T, Th, F		
	IDL BO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SR ²	1.06	.72	20	8a, M, T, Th, F		
Ahmed, Libya	IDL AO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SS ²	1.06	.72	20	8a, M, T, Th, F		
	IDL BO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SR ²	1.06	.72	20	8a, M, T, Th, F		
Ahmed, Libya	IDL AP ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SS ²	1.06	.72	20	8a, M, T, Th, F		
	IDL BO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SR ²	1.06	.72	20	8a, M, T, Th, F		
Ahmed, Libya	IDL AO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SS ²	1.06	.72	20	8a, M, T, Th, F		
	IDL BO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SR ²	1.06	.72	20	8a, M, T, Th, F		
Ahmed, Libya	IDL AP ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SS ²	1.06	.72	20	8a, M, T, Th, F		
	IDL BO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SR ²	1.06	.72	20	8a, M, T, Th, F		
Ahmed, Libya	IDL AO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SS ²	1.06	.72	20	8a, M, T, Th, F		
	IDL BO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SR ²	1.06	.72	20	8a, M, T, Th, F		
Ahmed, Libya	IDL AP ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SS ²	1.06	.72	20	8a, M, T, Th, F		
	IDL BO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SR ²	1.06	.72	20	8a, M, T, Th, F		
Ahmed, Libya	IDL AO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SS ²	1.06	.72	20	8a, M, T, Th, F		
	IDL BO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SR ²	1.06	.72	20	8a, M, T, Th, F		
Ahmed, Libya	IDL AP ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SS ²	1.06	.72	20	8a, M, T, Th, F		
	IDL BO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SR ²	1.06	.72	20	8a, M, T, Th, F		
Ahmed, Libya	IDL AO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SS ²	1.06	.72	20	8a, M, T, Th, F		
	IDL BO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SR ²	1.06	.72	20	8a, M, T, Th, F		
Ahmed, Libya	IDL AP ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SS ²	1.06	.72	20	8a, M, T, Th, F		
	IDL BO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SR ²	1.06	.72	20	8a, M, T, Th, F		
Ahmed, Libya	IDL AO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SS ²	1.06	.72	20	8a, M, T, Th, F		
	IDL BO ²	1.06	.72	20	8a, M, T, Th, F		
	IDL SR						

INTERNATIONAL CARGO TARIFFS — Continued

INTERNATIONAL CACAO TABLES — Continued

INTERNATIONAL CARGO TABLES — Continued

		RATES (See Note)								RATES (See Note)								RATES (See Note)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
Gauge		Port Arrive	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147</

INTERNATIONAL CARGO TABLES — Continued

Destination	RATES (See Note)					Destination	RATES (See Note)					Destination	RATES (See Note)				
	Airport		Aero		Dept		Airport		Aero		Dept		Airport		Aero		Dept
	1/2	2/2	3/2	4/2	5/2		1/2	2/2	3/2	4/2	5/2		1/2	2/2	3/2	4/2	5/2
Kingston, St. Afr.	IDL BO	2.00	1.32	25	50	St.M.T.Th.F						Madrid, Spain	IDL AO	1.30	0.80	21	Dly
Kingston, Bel. Congo	IDL S	1.00	1.42	25	50	T.W.Th.Jn						IDL FR	1.30	0.80	10		
Kingston, Jamaica	MIA P	.30	10	15	25	Twa Dly						IDL TR	1.10	0.60	10		
	MIA K	.15	10	15	25	M.Th.Sa						IDL BO	1.10	0.60	10	St.M.T.Th.F	
	BCF CS	.30	10	25	50	Dly						IDL AF	1.10	0.60	10		
	CDF CS	.30	10	25	50	Dly						IDL AP	1.10	0.60	10		
	TIP CS	.30	10	25	50	Dly						IDL BO	1.10	0.60	10		
	ELD CS	.30	10	25	50	Dly						IDL AF	1.10	0.60	10		
	EVV CS	.30	10	25	50	Dly						IDL AP	1.10	0.60	10		
	GRW CS	.30	10	25	50	Dly						IDL BO	1.10	0.60	10		
	HOT CS	.30	10	25	50	Dly						IDL AF	1.10	0.60	10		
	HAV CS	.17	10	15	25	Dly						IDL AP	1.10	0.60	10		
	HOT CS	.30	10	25	50	Dly						IDL BO	1.10	0.60	10		
	HOT CS	.30	10	25	50	Dly						IDL AF	1.10	0.60	10		
	IND CS	.30	10	25	50	Dly						IDL AP	1.10	0.60	10		
	IND CS	.30	10	25	50	Dly						IDL BO	1.10	0.60	10		
	JAN CS	.30	10	25	50	Dly						IDL AF	1.10	0.60	10		
	JLT CS	.30	10	25	50	Dly						IDL AP	1.10	0.60	10		
	MEM CS	.30	10	15	25	Dly						IDL BO	1.10	0.60	10		
	MHT CS	.30	17	15	25	Dly						IDL AF	1.10	0.60	10		
	PUK CS	.30	10	25	50	Dly						IDL AP	1.10	0.60	10		
	STL CS	.30	10	25	50	Dly						IDL BO	1.10	0.60	10		
	SHV CS	.30	10	25	50	Dly						IDL AF	1.10	0.60	10		
	HUF CS	.30	10	25	50	Dly						IDL AP	1.10	0.60	10		
	TOL CS	.30	10	25	50	Dly						IDL BO	1.10	0.60	10		
	MKC CS	.30	10	25	50	Dly						IDL AF	1.10	0.60	10		
	SGF CS	.30	10	25	50	Dly						IDL AP	1.10	0.60	10		
	UL T	.30	10	25	50	M.W.F						IDL BO	1.10	0.60	10		
	YTO T	.30	10	25	50	M.W.F						IDL AF	1.10	0.60	10		
	HOU SK	See Note SK										IDL AP	1.10	0.60	10		
	MSY SK	See Note SK										IDL BO	1.10	0.60	10		
Khartoum, Cen. Afr.	IDL AG	1.20	.90	25	Dly							IDL TR	1.00	0.60	10		
	IDL AF	1.20	.90	25	W.F							IDL SW	1.00	0.60	10		
Kuwait, Kuwait	IDL BO	1.70	1.32	25	50	St.M.T.Th.F						IDL TR	1.00	0.60	10		
	IDL BO	1.70	1.32	25	Dly							IDL SW	1.00	0.60	10		
Kristiansund, Norway	IDL SH	1.12	.86	20	Dly							IDL TR	1.00	0.60	10		
	IDL K	1.12	.86	20	Dly except Th							IDL SW	1.00	0.60	10		
	UL K	1.17	.87	20	W.F							IDL TR	1.00	0.60	10		
La Ceiba, Honduras	MSY TA	.80	.55		M.W.F							IDL SW	1.00	0.60	10		
	MEY TA	.80	.55		T.T.B.S.							IDL TR	1.00	0.60	10		
Lagos, Nigeria	IDL AG	1.71	1.27	25	50	St.M.T.Th.F						IDL SW	1.00	0.60	10		
	IDL AF	1.71	1.27	25	Twin W.H.							IDL TR	1.00	0.60	10		
La Guaira, Venezuela	LGA P	.30	.22	30	Dly							IDL SW	1.00	0.60	10		
	MIA P	.40	.30	30	Dly							IDL TR	1.00	0.60	10		
	MSY P	.40	.30	30	Dly							IDL SW	1.00	0.60	10		
	PUK P	.40	.30	30	Dly							IDL TR	1.00	0.60	10		
	BRO P	.40	.30	30	Dly							IDL SW	1.00	0.60	10		
	LAX P	.40	.30	30	Dly							IDL TR	1.00	0.60	10		
	MIA K	.40	.30	30	Dly							IDL SW	1.00	0.60	10		
	IDL LV	.60	.42	30	Dly except M							IDL TR	1.00	0.60	10		
	BUG CS	.60	.42	30	Dly							IDL SW	1.00	0.60	10		
	CHI CS	.60	.42	30	Dly							IDL TR	1.00	0.60	10		
	VIE CS	.60	.42	30	Dly							IDL SW	1.00	0.60	10		
	ELD CS	.60	.42	30	Dly							IDL TR	1.00	0.60	10		
	KIV CS	.60	.42	30	Dly							IDL SW	1.00	0.60	10		
	FWA CS	.60	.42	30	Dly							IDL TR	1.00	0.60	10		
	GRW CS	.60	.42	30	Dly							IDL SW	1.00	0.60	10		
	HOT CS	.60	.42	30	Dly							IDL TR	1.00	0.60	10		
	HOU CS	.60	.42	30	Dly							IDL SW	1.00	0.60	10		
	IND CS	.60	.42	30	Dly							IDL TR	1.00	0.60	10		
	JAN CS	.60	.42	30	Dly							IDL SW	1.00	0.60	10		
	LIT CS	.60	.42	30	Dly							IDL TR	1.00	0.60	10		
	MEM CS	.60	.42	30	Dly							IDL SW	1.00	0.60	10		
	MSY CS	.60	.42	30	Dly							IDL TR	1.00	0.60	10		
	PUK CS	.60	.42	30	Dly							IDL SW	1.00	0.60	10		
	STL CS	.60	.42	30	Dly							IDL TR	1.00	0.60	10		
	SHV CS	.60	.42	30	Dly							IDL SW	1.00	0.60	10		
	HUF CS	.60	.42	30	Dly							IDL TR	1.00	0.60	10		
	TOL CS	.60	.42	30	Dly							IDL SW	1.00	0.60	10		
	MKC CS	.60	.42	30	Dly							IDL TR	1.00	0.60	10		
	SGF CS	.60	.42	30	Dly							IDL SW	1.00	0.60	10		
	UL T	.60	.42	30	Dly							IDL TR	1.00	0.60	10		
	YTO T	.60	.42	30	Dly							IDL SW	1.00	0.60	10		
	HOU SK	See Note SK										IDL TR	1.00	0.60	10		
	MSY SK	See Note SK										IDL SW	1.00	0.60	10		
	TIP U*	1.10	.70	30	M.W.F							IDL TR	1.00	0.60	10		
La Paz, Bolivia	MIA P	1.07	.58	20	Dly except T							IDL SW	1.00	0.60	10		
	MSY P	1.15	.70	20	Dly except T							IDL TR	1.00	0.60	10		
	HOU P	1.10	.60	20	Dly except M							IDL SW	1.00	0.60	10		
	IND P	1.10	.60	20	Dly except M							IDL TR	1.00	0.60	10		
	LAX P	1.10	.60	20	Dly except M							IDL SW	1.00	0.60	10		
	CRI P	1.10	.60	20	Dly except M							IDL TR	1.00	0.60	10		
	TIP P	1.10	.60	20	Dly except M							IDL SW	1.00	0.60	10		
	FWW P	1.10	.60	20	Dly except M							IDL TR	1.00	0.60	10		
	HAY P	1.10	.57	20	Dly except M							IDL SW	1.00	0.60	10		
	IND P	1.10	.56	20	Dly except M							IDL TR	1.00	0.60	10		
	LRD P	1.10	.56	20	Dly except M							IDL SW	1.00	0.60	10		
	MSY P	1.10	.56	20	Dly except M							IDL TR	1.00	0.60	10		
	RAT P	1.10	.56	20	Dly except M							IDL SW	1.00	0.60	10		
	ELP P	1.10	.52	20	Dly except M							IDL TR	1.00	0.60	10		
	LAX P	1.10	.52	20	Dly except M							IDL SW	1.00	0.60	10		
	MSY P	1.10	.52	20	Dly except M							IDL TR	1.00	0.60	10		
	ELP P	1.10	.52	20	Dly except M							IDL SW	1.00	0.60	10		
	LAX P	1.10	.52	20	Dly except M							IDL TR	1.00	0.60	10		
	SFO P	1.10	.52	20	Dly except M							IDL SW	1.00	0.60	10		
	HOU SK	See Note SK										IDL TR	1.00	0.60	10		
	MSY SK	See Note SK										IDL SW	1.00	0.60	10		
	TIP U*	1.10	.70	30	M.W.F							IDL TR	1.00	0.60	10		
Lagos, Belgian Congo	LGA P	1.71	1.30	30	M.W.F							IDL SW	1.00	0.60	10		
	BOB P	1.70	1.30	30	M.W.F							IDL TR	1.00	0.60	10		
	IDL AG	1.60	1.28	30	M.W.F							IDL SW	1.00	0.60	10		
	IDL AF	1.60	1.28	30	M.W.F							IDL TR	1.00	0.60	10		
	IDL AP	1.60	1.28	30	M.W.F							IDL SW	1.00	0.60	10		
	IDL A*	1.60	1.28	30	M.W.F							IDL TR	1.00	0.60	10		
	IDL U*	1.60	1.28	30	M.W.F							IDL SW	1.00	0.60	10		
Lethbridge, Alberta, Canada	LOA T	1.80	.80	20	Dly												

INTERNATIONAL CARGO TABLES -- Continued

INTERNATIONAL CARGO TABLES—Continued

Destination	Airport and Airline	RATES (See Note)						Destination	Airport and Airline	RATES (See Note)						Destination	Airport and Airline	RATES (See Note)						
		45	50	55	60	65	70			45	50	55	60	65	70			45	50	55	60	65	70	
		23	28	32	36	40	44			23	28	32	36	40	44			23	28	32	36	40	44	
Paris, Cont'd.	DCA TW	1.07	.52	.20				Barbados, Conf'd.	HOU P	1.04	1.08	.35				San Juan, Conf'd.	BRO P	.65	.65	.15				
•	CHI TW	1.06	.54	.20				BRO P	1.04	1.08	.35				San Juan, Conf'd.	LAX P	.65	.65	.15					
•	BOS P	1.05	.54	.20				Region, South, Canada	LGA T	7.00	.15	.10				San Juan, Conf'd.	LAX P	.65	.65	.15				
•	LOA P	1.05	.54	.20				ROKAFJORD, Iceland	IDL AF	2.40	1.00	.35				San Juan, Conf'd.	MEX TA	.21	.21	.15				
•	BOE P	1.05	.54	.20				IDL AF	2.37	1.00	.35				San Juan, Conf'd.	MIA P	.21	.21	.15					
•	CHI U	1.05	.54	.20				IDL AO	.77	.74	.15				San Juan, Conf'd.	ROU SK	.21	.21	.15					
•	YIP U	1.05	.54	.20				BOE U	1.05	.54	.20				San Juan, Conf'd.	MEX SK	.21	.21	.15					
•	LAX U	1.20	.56	.20																				
•	LAX U	1.20	.56	.20																				
•	GAK U	1.20	.56	.20																				
Porto Alegre, Brazil	LGA P	.50	.45	.15																				
•	MAI P	.50	.45	.15																				
•	MSV P	.50	.45	.15																				
•	BRO P	.50	.45	.15																				
•	LAX P	1.12	.72	.15																				
•	BOE P	.50	.45	.15																				
•	MSV P	.50	.45	.15																				
•	BRO P	.50	.45	.15																				
•	LAX P	.50	.45	.15																				
•	YIP U	.50	.45	.15																				
Piso, Italy	IDL SW	1.08	.56	.20																				
•	LGA P	.55	.36	.15																				
•	MSV P	.55	.36	.15																				
Porto Alegre, Brazil	MAI P	.55	.36	.15																				
Porto Alegre, Brazil	MAI P	.55	.36	.15																				
Port Bell, Uganda	MAI P	.55	.36	.15																				
Port Elizabeth, U. S. Afr.	IDL AO	2.30	1.72	.20																				
Port of Spain, Trinidad	LGA P	.45	.30	.15																				
•	MSV P	.45	.30	.15																				
•	BRO P	.45	.30	.15																				
•	LAX P	.62	.45	.15																				
•	MAI SI	.55	.39	.10																				
•	MAI SI	.55	.39	.10																				
Porto Seguro, Ang. Ig. Sodas, Brazil	IDL BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	LGA BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
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Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
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Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
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Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
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Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				
Porto Seguro, Ang. Ig. Sodas, Brazil	MSV BO	1.00	1.50	.20																				

INTERNATIONAL CARGO TABLES—Continued

Destination	Airport and Airline	RATES (See Note)						Destination	Airport and Airline	RATES (See Note)						Destination	Airport and Airline	RATES (See Note)					
		45	50	55	60	65	70			45	50	55	60	65	70			45	50	55	60	65	70
		25	30	35	40	45	50			25	30	35	40	45	50			25	30	35	40	45	50
Salvador, Portugal	IDL AF ²	1.45	1.55	25	Dly			Tegucigalpa, Costa Rica	MEX TA	45	55	—	Dly except for T then 45			Uyuni, Bolivia	BRG T ²	1.25	25	15	Tb		
San Jose, Costa Rica	IDL HI ²	1.45	1.55	25	M.W.F.			Monterrey, Mexico	MEX TA	45	55	—				Vancouver, B. C., Canada	SEC II	40.5 ²	600	15	Dly		
S.E.L.	IDL AF ²	2.35	1.75	25	M.W.F.			Mexico City, Mexico	MEX TA	45	55	—				SEC II	40.5 ²	200	15	Dly			
—	IDL AF ²	2.30	1.75	25	M.W.F.			Teheran, Iran	IDL AF ²	1.81	1.35	25	Dly			SEC II	40.5 ²	10	15	Dly			
—	IDL R ²	2.50	1.80	25	Dly except for			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	25	15	Dly			
Blacksburg, Va.	IDL AF ²	1.88	1.45	25	Dly			—	IDL AF ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	35	15	Dly			
Boeing, Seattle	IDL S ²	1.80	1.45	25	Tb, Th, Sa			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	45	15	Dly			
Brussels, Belgium	IDL AF ²	1.15	1.25	25	Tb			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	55	15	Dly			
Burnaby, Norway	IDL AF ²	1.15	1.25	25	Tb			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	65	15	Dly			
—	IDL S ²	1.12	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	75	15	Dly			
Stockholm, Sweden	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	85	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	95	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	105	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	115	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	125	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	135	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	145	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	155	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	165	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	175	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	185	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	195	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	205	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	215	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	225	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	235	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	245	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	255	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	265	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	275	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	285	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	295	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	305	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	315	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	325	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	335	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	345	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	355	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	365	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	375	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	385	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	395	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	405	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	415	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	425	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	435	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	445	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	455	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	465	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	475	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	485	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	495	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	505	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	515	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	525	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	535	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	545	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	555	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	565	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	575	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	585	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	595	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	605	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly			—	IDL BO ²	1.81	1.35	25	M.W.F.			SEC II	40.5 ²	615	15	Dly			
—	IDL S ²	1.14	1.25	25	Dly		</td																

Compare!

AIR TRANSPORTATION QUARTERLY CIRCULATION REPORT

(Period of April-June, 1950)

APRIL	.....	8,029 copies
MAY	.....	8,040 copies
JUNE	.....	8,100 copies
AVERAGE FOR 3 MONTHS	.....	8,056 copies

CIRCULATION BREAKDOWN

(Based on June, 1950 issue)

Shippers (manufacturers, freight forwarders, traffic managers, exporters, importers, buyers, wholesalers, retailers, etc.)	.....	6,167
Airlines (various departments, executives, key personnel, etc.)	.....	559
Aircraft and equipment manufacturers, sales and service	.....	65
Military	.....	83
Banking organizations	.....	8
Insurance organizations	.....	31
Trade organizations, chambers of commerce, etc.	.....	115
U. S. federal, state, and municipal departments	.....	280
Foreign governments	.....	55
Colleges, universities, students, etc.	.....	215
Public and business libraries	.....	58
Advertising agencies, public relations firms, exchanges	.....	91
Newspapers, news agencies, magazines, etc.	.....	17
Miscellaneous subscriptions	.....	112
Office files, samples, over-counter sales	.....	244
TOTAL	.....	8,100

I hereby make oath and say that the above statement is true, and that Printer's Invoice and Post Office Statement are available. . . . Richard Minkin, Managing Editor

Subscribed and sworn to before me this 27th day of June, 1950.

. . . Gertrude E. Smiser, Notary Public



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**"Three big reasons why we
are shipping more and more
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"Squibb uses air freight primarily because it offers us:

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- 2 **Better handling.** Air freight eliminates the need for much costly packaging; yet breakage is reduced to a minimum.
- 3 **Ease of distribution.** Air freight permits us to serve markets throughout the world in a matter of hours and days that otherwise would take weeks."

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